EA-87-02

Ontario

ENVIRONMENTAL ASSESSMENT BOARD

VOLUME: 168

DATE: Monday, December 11th, 1989

BEFORE: M.I. JEFFERY, Q.C., Chairman
E. MARTEL, Member
A. KOVEN, Member

FOR HEARING UPDATES CALL (TOLL-FREE): 1-800-387-8810

FARR & ASSOCIATES REPORTING INC.

(416) 482-3277

2300 Yonge St., Suite 709, Toronto, Canada M4P 1E4

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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental Assessment for Timber Management on Crown Lands in Ontario;

- and -

IN THE MATTER OF a Notice by the Honourable Jim Bradley, Minister of the Environment, requiring the Environmental Assessment Board to hold a hearing with respect to a Class Environmental Assessment (No. NR-AA-30) of an undertaking by the Ministry of Natural Resources for the activity of timber management on Crown Lands in Ontario.

Hearing held at the offices of the Environmental Assessment Board, 2300 Yonge Street, Suite 1201, Toronto, Ontario, on Monday, December 11th, 1989, commencing at 9:00 a.m.

VOLUME 168

BEFORE:

MR. MICHAEL I. JEFFERY, Q.C.	Chairman
MR. ELIE MARTEL	Member
MRS. ANNE KOVEN	Member

A P P E A R A N C E S

MR. V. FREIDIN, Q.C.) MS. C. BLASTORAH) MS. K. MURPHY) MS. Y. HERSCHER)	MINISTRY OF NATURAL RESOURCES
MR. B. CAMPBELL) MS. J. SEABORN) MS. B. HARVIE)	MINISTRY OF ENVIRONMENT
MR. R. TUER, Q.C.) MR. R. COSMAN) MS. E. CRONK) MR. P.R. CASSIDY)	ONTARIO FOREST INDUSTRY ASSOCIATION and ONTARIO LUMBER MANUFACTURERS' ASSOCIATION
MR. H. TURKSTRA	ENVIRONMENTAL ASSESSMENT BOARD
MR. E. HANNA) DR. T. QUINNEY)	ONTARIO FEDERATION OF ANGLERS & HUNTERS
MR. D. HUNTER) MS. N. KLEER)	NISHNAWBE-ASKI NATION and WINDIGO TRIBAL COUNCIL
MR. J.F. CASTRILLI) MS. M. SWENARCHUK) MR. R. LINDGREN)	FORESTS FOR TOMORROW
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MR. Y. GERVAIS) MR. R. BARNES)	ONTARIO TRAPPERS ASSOCIATION
MR. R. EDWARDS) MR. B. McKERCHER)	NORTHERN ONTARIO TOURIST OUTFITTERS ASSOCIATION

APPEARANCES: (Cont'd)

MR. L. GREENSPOON) MS. B. LLOYD)	NORTHWATCH
MR. J.W. ERICKSON, Q.C.) MR. B. BABCOCK)	RED LAKE-EAR FALLS JOINT MUNICIPAL COMMITTEE
MR. D. SCOTT) MR. J.S. TAYLOR)	NORTHWESTERN ONTARIO ASSOCIATED CHAMBERS OF COMMERCE
MR. J.W. HARBELL) MR. S.M. MAKUCH)	GREAT LAKES FOREST
MR. J. EBBS	ONTARIO PROFESSIONAL FORESTERS ASSOCIATION
MR. D. KING	VENTURE TOURISM ASSOCIATION OF ONTARIO
MR. D. COLBORNE) MS. S.V. BAIR-MUIRHEAD)	GRAND COUNCIL TREATY #3
MR. R. REILLY	ONTARIO METIS & ABORIGINAL ASSOCIATION
MR. H. GRAHAM	CANADIAN INSTITUTE OF FORESTRY (CENTRAL ONTARIO SECTION)
MR. G.J. KINLIN	DEPARTMENT OF JUSTICE
MR. S.J. STEPINAC	MINISTRY OF NORTHERN DEVELOPMENT & MINES
MR. M. COATES	ONTARIO FORESTRY ASSOCIATION
MR. P. ODORIZZI	BEARDMORE-LAKE NIPIGON WATCHDOG SOCIETY

APPEARANCES: (Cont'd)

MR. R.L. AXFORD	CANADIAN ASSOCIATION OF SINGLE INDUSTRY TOWNS
MR. M.O. EDWARDS	FORT FRANCES CHAMBER OF COMMERCE
MR. P.D. McCUTCHEON	GEORGE NIXON
MR. C. BRUNETTA	NORTHWESTERN ONTARIO TOURISM ASSOCIATION

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---Upon commencing at 9:07 a.m.

THE CHAIRMAN: Good morning. Be seated, please.

Are there any preliminary matters to deal with before we commence with Mr. Curtis?

(no response)

Very well, Mr. Curtis.

MR. CURTIS: Thank you. Can you hear that?

GORDON BASKERVILLE, Resumed

CROSS-EXAMINATION BY MR. CURTIS:

Q. Dean Baskerville, so far in the last week or so much of your testimony has been directed towards ensuring that the management structure in Ontario must be able to translate goals and objectives into on-the-ground wise management in Ontario's forests.

Underlying our questions as well is the concern that Ontario's forests be managed wisely; however, the focus of our questions will be the foresters themselves who implement management since they, of course, are the focus of the mandate of the OPFA.

I was also pleased to see that many of the questions over the past week were directed towards

just that and some of those points I would like to pursue and expand on with you.

The first one I want to address involves the training of professional foresters. Some of the comments and questions to date concern training and expertise. For example, during your testimony in-chief you said that the skills are emerging to ensure that we can do integration and move beyond constraint.

You've also indicated that timber supply analysis skills are now common amongst foresters but that they still need to obtain skills in other values, and I think one of the examples that we have used has been habitat supply analysis.

The training and capabilities of foresters with regard to implementation of management and decision-making is an important issue therefore in the context of your evidence to date, and I wonder if I could get you to expand a little bit on the actual training; for example, could you outline broadly whether and to what extent foresters are trained in the following issues and I will just list them and then go back to them individually.

First of all, principles and techniques of integrated resource management, effects of timber management practices on non-timber values,

optimization, concepts of rotation, allowable depletion and related economic theory, adaptive management and the variety of concepts of forest management and harvesting techniques such as shelterwood and selection management.

So back to the first one. Just very broadly, to what extent are foresters trained in principles and techniques of integrated resource management?

A. It's easiest, Mr. Chairman, to answer that for the program I'm most familiar with rather than in the general sense, but I believe there is a reasonable consistency across the seven institutions that have forestry programs.

The principles of integration, of integrated management are well established from about year three -- through years three, four and five. The programs close on how do you take building blocks, pieces and in fact integrate. The skills, the integrated skills and the tools to do that are at hand. As I said earlier, the thing that is missing are the measures of all of the things that you want integrated.

If you are going to integrate you have to have -- must have some way of knowing how much of one thing you are trading to get so much of another and

that the weakness lies in the way those other values are assessed rather than in the integrating tools. The integrating tools have been developed by mathematicians far beyond the capabilities of our -- anyone to measure the impacts that we need to know in the woods.

Q. And how about with regard to the effects of timber management practices on non-timber values?

A. The students would all have a course in recreation, a course in wildlife, a course in water at minimum. That varies from place to place and how many options they take, but all would be required to take one course minimum in each of those and all are required to take part in the two practicum courses which involve, the first one, discussions of how to integrate and the second one, in our case we formed the 5th year class into a consulting company actually and we undertake a contract each year with some property owner and the fifth year class carries out all of the field study and prepares a management plan for the property owner. It is a major undertaking with a major report coming out of it.

We have, I think without exception in the years I have been Dean and probably before that, used examples where there was perhaps a preponderance on the

integrated side rather than on the timber side. The most recent one was the City of St. John watershed, they wanted to know how they might manage it and the students spent -- they go out and do the surveys starting in the fall and by spring have to deliver the consultants report.

THE CHAIRMAN: Is this effort a mock exercise or does the land owner act upon the report?

THE WITNESS: They pay for it, they pay real money. We have a little bit of trouble with some of the consulting community that we are under-selling them, but we charge enough that we pay for all of the costs of carrying out the surveys and all of the transport of the students. So we are up in the $10,000 range usually at least and --

THE CHAIRMAN: Does the owner get the benefit of faculty passing judgment on the appropriateness or completeness of the report?

THE WITNESS: Yes. In fact, the final presentation is held in an open atmosphere where -- the St. John one was presented at City Council and they in fact appear to be acting on it.

The degree to with which someone will act on the management plan depends on the degree to which the plan reflects their objectives and their

capabilities in terms of funding. There is a pretty good track record though.

MR. CURTIS: Q. Are foresters trained in techniques of optimization?

A. Yes. The training and optimization is -- there is even a risk that that gets excessive because it is such a neat tool, so easy now to run, so many different ways, so many different algorithms for doing optimization.

We have two courses that deal with integration and essentially our courses in optimization we try not to take make it just pure optimization, but that is a -- it's a quantitative tool, it's repeatable, has a lot of advantages in terms of looking at tradeoffs systematically; consequently, it's an easy one to teach and an easy one for students to grasp.

Q. Are concepts of rotation, allowable depletion and related economic theory standard components of forestry curriculum?

A. Yes, those would be central issues that would be treated throughout the program from start to finish. We are probably looking at 10 or 11 courses that would relate to those things.

Q. What about principles of adaptive management?

A. To the extent, Mr. Chairman, that when I started I pointed out that the key difference between management as taught in conventional resource text and adaptive management is the way you treat the mechanisms for your forecasts, whether you treat them as if analogous to truth, what you're trying to validate and whether you treat them as a hypothesis which you attempt to invalidate.

All programs would have management in it and certainly in our program there are -- that's treated extensively in the practical courses and in the policy course that I teach we deal extensively with that approach.

Q. Are foresters trained in a variety of techniques of forest management and harvesting; for example, some harvesting techniques involve blocks of clear-cuts, others involve shelterwood harvest, other involve selection management.

Are foresters trained in or at least exposed to these varying techniques of management?

A. Yes. Again, that's part of traditional training, that would make a substantive part of the mid years of the program. Those are tools that one would need in order to manage.

In general, the programs begin with

building blocks which are essentially biological and mathematical; the middle years look at tools like these various forms of harvesting and treatment; and the later years examine the use of these tools in the construction of management plans through the use of these tools.

Q. Could you briefly outline some other broad areas which you feel are important or in which foresters should receive training in other areas? Are there any that I missed, any significant components?

A. It's I guess more a question of the level at which you deal with these things. We try to structure programs so that they cover certain elements of the social sciences in humanities right through to the raw mathematics of optimization.

A standard program at UMB would get you a university degree with 130 credit hours. Without knowing what that means, just take it as a guide number. The forestry degree is 202 credit hours and that's part of the reason why it is a year longer than any of the others. We still argue a lot whether or not it has everything in it that it should have.

THE CHAIRMAN: On that basis we would certainly qualify for our degree at this time.

THE WITNESS: Oh yes.

MR. CURTIS: Q. During your testimony, Dean Baskerville, you made it clear that you feel foresters are trained in the management of natural systems and that all forestry programs emphasis system dynamics. Would you agree then, in other words, that foresters are trained in more than just timber management?

A. Yes. The emphasis is on dynamics, control of dynamics in natural systems, not on, as one might expect, in say a science degree or a biology degree, you would look at the inherent nature of the dynamics or the inherent nature of the system but not the control thereof.

The emphasis here is on both the underlying mechanisms of control and on biological control and how to manage those, and those principles are the same for any renewable resource, there is not much difference. You change your target mechanism that you are trying to forecast and manage, but the principles are the same.

Q. Are you aware of any profession or discipline other than forestry whose members or practitioners are trained as broadly in managing the forest system as a system?

A. In managing the forest system, no.

Q. Having said this, however, isn't it also fair to say that foresters may lack some specific training relating to some impacts of forest management, for example, on water supply, although at the same time it might also be fair to say that some foresters do have the best training in specialized areas that are aren't necessarily a part of the undergraduate curriculum?

A. I would be cautious. I think that what we try to produce is a person who has an understanding of natural system dynamics and natural system management, but not a specialist in -- not even a specialist in silviculture. We provide separate streams for people to become specialists in silviculture, for instance, if they wanted to, but the thrust, the overall thrust of the program is natural system management.

Q. Doesn't this just make the point then that the input of other professionals or experts can be an important aspect of managing a resource as a system?

A. Not can be, it would be essential I would argue.

Q. I would like to move into the involvement of foresters in various levels of the management structure.

You have talked about, during your evidence, topics such as forecast and production possibilities, successive approximation, we have already discussed optimization, adaptive management. Would you agree that to implement these and to begin taking the first critical steps that we must ensure that we have the appropriate level of training and expertise at the appropriate levels?

A. The risk I see, Mr. Chairman, is if you don't have people who have real comprehension of the tools and the systems and how the tools are used, you run the risk of the tools being used, not as a craftsman uses tools, but just the way somebody beats and hammers with a hammer.

I would argue as strongly as possible that the issue here should be craft skills with these management tools. That takes some basic understanding and some experience. There is a combination that's required to be really competent.

Q. I will be discussing that aspect as well a little bit later.

I just want to go through some -- very briefly some of the statements that you've made during examination-in-chief. You have said that the person closest to the forest is the most important, that the

level of understanding of the system is highest among the person working most closely with it, but it is more important to respond to the forest in the bureaucratic system.

You have also said that it is the unit foresters who will largely determine quality control since they are where the system is converted into action and that they are the only real resource manager in the system, and you stated that the unit forester should be clearly designated as the responsible and accountable manager of the unit.

Is it fair to conclude here that when you use the word manager here and in your witness statement that you are referring to the foresters making these decisions?

A. I suppose to answer that question completely I would have to go back and look at how I used manager each time, but I believe that I normally use it in exactly that context.

The important issue here is that each forest property that you might choose to manage will have unique elements. There are similarities between any two units that you might want to pick of the 117 in this province, but there are also dissimilarities, there no two that are exactly alike and, consequently

in the quality of management one of the underlying measures or underlying influences is going to be the degree to which the manager understands the particular forest that he's trying to design management for. So that association at that level I believe is very important.

Q. You have emphasized the importance of unit forester as being the resource manager, would you agree that there could or should be other positions or levels in a structure where foresters could be assigned responsibility, for example, sub-units or varying tasks in the management plan itself?

A. Yes, they can work anywhere I suppose. The structures that work really well have professionals spread from very senior administrative positions right down to the ground.

I guess the important issue is that at some point when you get close to the ground and you are talking about a particular property and the design of its management over a period of time that there be a person who (a) has familiarity with the property and (b) has the familiarity with the design of management.

Q. I just want to explore some ideas with you right now. I am not putting them forward as any position of the OPFA, but just to get your reaction

to it.

How would you react to the notion that there could be different levels of involvement of foresters, and I ask this because we have emphasized that there has to be someone in the position of responsibility and accountability, but I wonder if we could look at it in perhaps three different levels. One level could be simply requiring that foresters be involved in the process, a second level could require the supervision of a forester, and a third level could require the approval of a forester.

A. I'm not sure what I see what the connection is, could you...

Q. For example, the unit forester, you have indicated, should be the focal point of the management system and a unit forester should approve management plans, that level of approval is probably one of the most important in the entire system, but I guess what I'm suggesting is that there could be lesser levels which still require foresters being involved but not to the extent of putting a stamp of approval, as it were, and the idea behind that would simply be to ensure that you've got the right people at the right place?

A. It comes back again to the issue I

guess of the unit. It seem to me that that has to be the focus of management because it is the defined area upon which you have a defined forest with defined objectives and, consequently, defined actions on how to achieve those. Certainly the craft of management design I believe is centered mostly at that level. Other levels above or -- above in the administrative structure, tend to provide administrative support for that activity.

I think that in every sense of the word management design is a creative enterprise, not a bureaucratic one. You are trying to evaluate system dynamics and then build, design a control that would give you something that you are looking for. You can administer the people who carry that out, but you can't administer the process itself without destroying the process.

THE CHAIRMAN: But, Dean Baskerville, if you accomplished down the road the true form of integrate resource management as you put forward whereby there is going to be an evaluation of both the timber aspects and wildlife aspects in the same integrated land base, et cetera, and if you acknowledge the fact that perhaps some of the wildlife concerns are better handled by a specialist in that area, whether it

be a wildlife biologist or somebody with specific expertise on the wildlife side, would you still advocate that the timber management plans are developed and approved only by the forester; or, in other words, that the forester has the overriding say on a timber management plan wherein the input to that plan also depends to a large extent on, say, expertise concerning other non-timber resources?

THE WITNESS: The timber part of it, I suppose, somebody built a plan, whatever comes out of it as long as someone is clearly and identifiably responsible for that plan and its impact on the resource and that to me is crucial. Humans perform best when they know that there would be an evaluation.

I would go further than the way you described it. It seems to me that what's missing in the process now is in fact reasonable participation of the non-timber values. They don't enter into the plan as part of an objective. They enter into the plan as a constraint on the timber objective, so if there is an underlying problem here it is to change that.

THE CHAIRMAN: Okay. But supposing you do that, then would you advocate that the person who ends up signing the plan will be the forester irrespective of what the Crown Timber Act or other

legislation may dictate?

THE WITNESS: I'm not sure whether a title is so important as it be a person who has confidence, has a grasp of system dynamics and as those system dynamics relate to timber, wildlife and whatever, that whatever the things are that you are trying to put in and that is able to design interventions in the forest so that the timber and other elements are in fact delivered.

THE CHAIRMAN: But would you not suggest that there may be a problem of perception by certain people in the industry if the stamp of approval were given by, say, a wildlife biologist to a timber management plan?

THE WITNESS: However we do that, that will happen. I mean, if it's a forester, you already have the problem that others say: But he knows nothing of these other things.

I had acquaitance with a situation where in fact a person who is signing the plan is a graduate of the wildlife program. He also has a Bachelor of Science in Forestry, but it's in wildlife and it seems to work reasonably well.

THE CHAIRMAN: But there he is legitimized, so to speak, because he has the Bachelor

of Forestry; right?

THE WITNESS: Yes. I think what's missing -- the element that's missing and what trouble me most, and it hasn't to do with title, it has to do with whether or not the person has dealt with management of the system as opposed to what it looks like.

Many science programs will tell you what a system looks like, few, if any, deal with control of system dynamics except in applied sciences. That is by definition an applied science.

THE CHAIRMAN: Do you not think that somebody could get around what may be objectionable to some because of the area of expertise within which the person actually signing or approving the plan is qualified; for instance if it is a forester, some people may be suspicious who are interested in non-timber objectives just because it is a forester, to have the formation of the plan and the approval of the plan actually split so that you don't have an approved plan until you have the forester and the wildlife biologist or the other non-timber resource actually signing off.

THE WITNESS: I think, if I'm correct, that that's the way it works now, that in fact four or

five people must sign it off. The issue to me isn't: Did they sit and talk about it and sign it off, but is there comprehension of what it is they've signed off. I think that would be more important and I don't know how you mandate that. It's a very difficult thing to say: You will think.

THE CHAIRMAN: Well, other than providing for the joint development of the plan--

THE WITNESS: Yes.

THE CHAIRMAN: --in perhaps a different fashion than somebody producing the plan and everybody else just reviews it?

THE WITNESS: Oh, a big difference.

MR. MARTEL: What about two co-authors? Instead of one author, one of them a biologist, wildlife or fish, at the same time a forester so in fact right from square you have the two different concepts coming together and have to plan carefully otherwise there is going to be total war.

THE WITNESS: Again, I would argue that the important distinction is whether or not the cosigners, whoever they are, have simply cosigned that this doesn't appear to violate any of the constraints they might have imagined as opposed to they have actively participated in the creation of some

integration towardw a common objective where balancing has occurred across output in terms of recreation, output in terms of timber, output in terms of moose and whatever.

MR. MARTEL: That's why I said they co-authored it. Rather than at the end somebody comes together and forces them into signing some document, that they start from the beginning, right at the outset working together, they have to, in order to co-author a plan that's going to be acceptable to all parties.

THE WITNESS: I agree. A plan that has signatures on it where there is no intellectual commitment associated with the signature isn't a plan at all.

MR. CURTIS: Q. Just so I understand what you've said. You seem to agree then that it's important to have the input of different expertise into the development of the management plan but, again, you have emphasized that as long as there is someone who understands how the system interacts to be responsible for the ultimate implementation of that plan; is that a fair assessment?

A. Yes. I think the issue here is that the biggest mistake is to design a plan that has a set of actions and a set of objectives where there is no

cause/effect connection between the two. It is a nice plan, but it won't get you where you want to go.

There must be rigor in the process that says: These actions could reasonably be expected to have these effects and these effects stimulated in the forest lead to the results that we have set as our objective.

THE CHAIRMAN: Dean Baskerville, we have concentrated to this point essentially in your testimony of talking in terms of non-timber resources with wildlife and/or fisheries concerns as well as the timber concerns, but it is acknowledged that there is a lot of other non-timber values out there, such as tourism values and native values and all kind of others.

How would you bring these into - other than wildlife, fisheries and timber - how would you bring the other ones into the development of a timber management plan because you always run the risk if you get too many people involved in, say, authoring something that you can't get the degree of direction or unanimity and you can't build in efficiency in terms of producing something, but how do you bring in all these other interests, in your view?

THE WITNESS: I think that our success in

managing areas of forest for more than one output will depend entirely on the degree to which those other players enter with the mind set of a creator as opposed to the mine set of a constrainer, but what is it we are trying to make, then there is some hope that in fact we can -- I think even the aesthetic things.

After you asked the question the other day I thought about it and there are things like the guidelines that exist here for aesthetics in design of roads and cutting patterns, there is an extensive similar set of guidelines and they are used in the sense that we were talking of guidelines last week in B.C. There are some fairly elegant things being done, at least Simon Fraser University and probably at other places where using geographic information systems, the viewscape, and it's easy to -- one of the themes, one of the layers in a computerized mapping system can be contour, so that you can say: If I'm at that point what could I see, could I see a clearcut that was there, and those are being used as -- are being built, designed, developed as for the purposes of designing, permitting the design of aesthetics into timber management.

I really believe that the opportunities to build those in exist only to the extent that we can

get some tool. If the only thing we can do is talk about it and argue about it, we will never get any comfort, any real comfort that we've achieved any of them. It's really awkward. If after you have met all of the constraints someone goes out and says: It doesn't look right, and we still -- don't know to fix it because we didn't know exactly what it was we were trying to do. It comes down to the stark difference between the two.

A timber forecast is completely and utterly specified biologically into the future, the biological dynamics; whereas I demonstrated they are explicit in all forecasts that are used conventionally for timber and then you come along with: But it doesn't feel good, and it is very difficult to integrate a feel. Yet the thing that's being represented by that feel somehow or other must be integrated.

THE CHAIRMAN: Do you go along with the management team concept?

THE WITNESS: Yes. I have no problem with that. I don't think that that's the point that was being challenged here.

You need the skills, the understanding of all of the resource elements that are involved that you

are going to try and manage and you need some management skills in order to make the thing work. You certainly will not find any one person would possesses the full range of recreation, fisheries, wildlife, timber.

THE CHAIRMAN: And do you believe that the people that might sit on the management committee should be, for the lack of a better word, expert in the area that they represent as opposed to lay persons?

THE WITNESS: I guess I will have to say unequivocally they should be expert. I have practically no faith at all that lay people, having learned their biology from the television, have any grasp whatever of realistic cause/effect connections and the likelihood of them designing a set of actions and picking a set of objectives that weren't in fact related is very high.

THE CHAIRMAN: But that expertise could be as a result of experience as opposed to formal education--

THE WITNESS: Yes.

THE CHAIRMAN: --in some instances? For instance, a trapper who hasn't got a formal biological education could probably give more insight to trapping concerns than just a biologist who really hasn't been

out in the field trapping for year after year.

THE WITNESS: In that context, if that was the point you were making, yes, I can see that. I frequently, when I am trying to find out something about that dynamics of the forest, I find the loggers that worked in the camps that were there, particularly camp foreman and camp clerks seem to have pretty good memories of what went on. That as distinct from designing though. In terms of providing basic understanding, you can get some from those kinds of people.

MR. MARTEL: How do you ensure that the public interest is represented if they are not on the planning team?

THE WITNESS: Somebody someplace in the structure has to set objectives, has to choose what the balance will be and, as I said earlier, that to me is something that the owner of the property, whoever the owner is, in this case public, should decide.

That is a different, qualitatively different thing than saying: Here is the set of actions which you've implemented over time and over space in the system for 50 years will in fact deliver the...

THE CHAIRMAN: So it is the Crown if it

is Crown land that sets the objectives and, therefore, is the guardian of the public interest in your view? Does that translate what you just said?

THE WITNESS: Not quite, but that's the way we have structured the thing, but in fact that doesn't work or we wouldn't have public interest groups intervene. Well, it is actually a fairly serious matter.

You have a case where a provincial government enters into a contract with industry to do something, both sides in good faith, and the industry believing that the Crown has in fact represented the people and then discovering after the fact that they did not and can't deliver their side. Those kinds -- that to me is a reflection of system failure someplace.

THE CHAIRMAN: Well, could you still preserve the system, so to speak, by having the Crown define the objectives in a public forum?

THE WITNESS: Yes, clearly.

THE CHAIRMAN: With all kinds of input from the groups that will be affected by those objective decisions?

THE WITNESS: I would even argue, to go back to what I said last week, that this team of people knowledgeable in timber, wildlife and whatever the

other elements are, have done some fairly extensive ground work to offer alternatives which are consistent between the actions proposed and the objectives claimed for the public discussion, and that the public discussion chooses one of those and then you go back to the 'technicrats' to make it happen.

MR. CURTIS: Q. I would like to pursue just briefly the notion of bias which we just touched on in the last line of questioning.

During your testimony last week you noted that a forester bias towards timber which results from the, as I think you put it, the exercise of their craft skills is a good thing. Now, normally bias carries with it a negative connotation, but clearly in that case you meant it in a good sense.

Could you just clarify how you meant it in a good sense?

A. If I had a teacher on my faculty who had a bias for excellence, that wouldn't trouble me. I would think that was pretty nice and I would try to find out how I might get that bias instilled to a few others.

To me bias is a predelection in some direction, this is an attitude towards something, and whether you want to use the word in a good sense or a

bad sense, it seems to me that if you are going to put together a group who are going to design integrated management on an area of forest, they better possess powerful interests and dedication to the things that they represent, and if that constitutes bias I think it's a good thing.

I wouldn't want to do it with somebody who comes to the table, because he has been directed to come to the table today because whoever else would have come isn't available, that sort of the thing. They should be there because they have an interest, representing interest and are seeking to promulgate it.

Q. Thank you. On other matter, you testified that we are weak in the connection between planning and implementation, and in that context you stated that too large a management unit means that our ability to implement management is weakened.

The figures that we've used last week indicated that one unit forester is responsible for an average between 150- to 200,000 hectares with virtually no support.

At this point, Mr. Chairman, I would like to discuss some evidence that was put in as interrogatories through questions asked by the OPFA. The question asked was numbers of units, numbers of

foresters and sizes of units. The information that was received indicated that --

THE CHAIRMAN: Could you give us which interrogatory this was and the date of it?

MR. CURTIS: December -- sorry, October 1988.

THE CHAIRMAN: For which panel was this put in for?

MR. CURTIS: Panel 7. The information given indicated that there were 77 units with foresters assigned to them. In some cases, there were foresters responsible for more than one unit and what that meant, according to the figures we've received, is that the average area of responsibility for one forester amounts to 486,000 hectares or somewhere in the order of 1,200,000 acres.

Recalling as well in your testimony last week, you discussed the example in Sweden where there is one forester for about 10,000 hectares, I think was the figure used. In your view, what would be a reasonable target in terms of the area a forester should be responsible for in Ontario to ensure effective implementation of wise management?

A. I am in danger here, Mr. Chairman, of trying to create jobs for our graduates.

THE CHAIRMAN: That might exhibit a bias but we can understand that.

THE WITNESS: This comes back to the business of a linkage between management design and implementation, and I tried to make the point last week that design is relatively straightforward. You can use optimization technique or whatever, there are goal programming, there is a wide array of approaches to the design.

The two actions or activities on either side of design are really crucial and that is how do we take the variability in the forest and aggregate it into some form that we can use for design purposes, and I showed you one example where I aggregated a whole forest into a series of yield curves and age-class structures.

Having done that, you can go through design, but the design comes out to be a prescription for the aggregate forest. To implement, it is now necessary to disaggregate your solution, your design down to individual actions spread through a forest, and the difficulty comes in those two activities on either side more than in the design and the difficulty is highly constrained by manpower on either side.

It takes more than -- it's not a rote job

to aggregate stands that are going to develop in the same pattern and group them together so that you know how many you've got that are at a certain stage of development. It takes considerable skill and considerable technology now to take an aggregate solution and find out where it should actually go.

Supposing that a management plan as it is set out allows that 10,000 hectares should be harvested in one of these management units each year in the spruce working group, it is now necessary for somebody to find 10,000 hectares in total somewhere out there and there is no sign posted that says: Here, this is one of them, and there are a whole series of constraints that say it can't be one 10,000 acre or hectare block, it can't be larger than a certain size, that means there is at least probably around 6,000 of them. So now where do the 6,000 actually go.

The quality of management that is achieved on the ground is at present, I believe, constrained by our ability in this continent to take these -- our nice comfortable average solutions which are very easy to come, we could do it here today I am sure, and disaggregate those so what you get out on 400,000 hectare management unit over time is what you intended to get. That is not a trivial issue.

Yes?

MR. MARTEL: Is that because we've just had too much forest, it has been too easy to do without -- with too few people so we just say: Go out there and find a hunk of ground and cut like mad?

I mean, if we had been like Europe and we had to ration it in a much more appropriate fashion, in a much more skilled manner rather than having the endless forests which we thought was never going to end which has lead to that sort of practice here.

THE WITNESS: I think that's a fair statement, that when you have a lot of anything you don't have to manage it and we haven't.

We've got a humungous area of forest and until we began to see that there were limits on timber production, if not in volume certainly in the quality that we wanted, and I think that by and large the country is experiencing not a problem in the volume of timber available, we probably have more available now than we every had, but certainly we have a problem in quality available and of it being available in the sight right sorts of locations.

All of the other values, the recreational values, the moose values, the deer values and so on, have emerged and in, what, the last 10 or 15 years as

issues where the ability of people who own the property to go out and walk upon it and enjoy these things has been greatly enhanced. There's roads now every where and people use them. Then there comes this desire to: Why can't I get what I want here.

So the need to manage, I would say, has emerged in 20 years in this country and that there has been more progress in resource management in the last 10 years than there was in all the time before that I would say and I have said that frequently, so I will say it again.

THE CHAIRMAN: Dean Baskerville, given the fact that a forester in Ontario is responsible for say approximately a million acres for management of that area, how do you feel about charging the forester with developing the plans for management in an integrated resource management context, supervising the delivery of the objectives in terms of implementation on the ground and also being responsible to account for every decision made in the course of management in terms of reporting it or writing it down or keeping the records so that all management decisions made in the course of exercising control over that area can be fully documented and traceable?

And I would like you to sort of consider

that in the context of whether or not in your view a forester can do all of these things and still manage a million acres.

THE WITNESS: The issue here -- you say a forester who could.

What you described would suggest that there would be somewhere in the neighbourhood of 800 to 1,000 individual operations every year in the wood someplace, somewhere in the neighbourhood of 120 kilometres of new road to be built and somewhere in the neighbourhood of probably 800 kilometres of the last level of road before you get to pile of wood to be built.

That's a monumental task. To ask a person to comprehend a million hectares, one person, any person, no matter what his skill training, to comprehend a million hectares, the dynamics of the stands on it and the dynamics of all of the species in it including the species that runs around with an orange machine and harvests trees, it is a monumental task.

THE CHAIRMAN: And if you add to the task the necessity for every decision to be documented in some fashion, I assume by what you are saying that that makes it even more impossible?

THE WITNESS: Well, it makes it very awkward to go back to the idea of intellect, the application of intellect to the problem will be minimized at that level.

If you think about trying to manage any enormously spread system like that, what will have to happen is that a whole bunch of decisions will need to be codified so that you can say: That's a No. 1 and that's a No. 2, and tell -- you know, really reduce the information content, either for a decision or reporting after it on impact.

What it would mean in terms of management control, if you think back in terms of my feedback control and the temperature, it would mean you had at best a temperature that measured to the nearest five or ten degrees Centigrade and a very slow response in the system, wide amplitudes in terms of system control.

THE CHAIRMAN: And yet you acknowledge the need for reporting in order that somebody can come along after the fact and attempt to evaluate the success of those management applications.

THE WITNESS: Yes. If you -- there needs to be a record of the actions taken, so that if you want to be able to find out if the actions taken caused what it was you intended them to have, yes.

That property that you described where one forester in a European context would have at least a hundred.

THE CHAIRMAN: Foresters.

THE WITNESS: Yes.

MR. TURKSTRA: Mr. Chairman, I'm not sure that you and Mr. Baskerville are on the same units of measurement. I thought you had said a million acres and I think he read a million hectares.

THE CHAIRMAN: Yes, I was using a million acres because I couldn't remember the number of hectares, it's 477,000 or something. It was in the four hundred thousand.

MR. MARTEL: 486.

THE WITNESS: Cut what I said in half roughly.

THE CHAIRMAN: So we are looking at 50 foresters now for that kind of unit?

THE WITNESS: Yes, the Swedish model would have about that, yes.

MR. MARTEL: You are going to have to expand your school of forestry.

THE CHAIRMAN: And I take it, in addition to foresters, we are talking things like forest technicians and the other experts that are not --

THE WITNESS: Wildlife biologists.

THE CHAIRMAN: That's right.

THE WITNESS: Recreation specialists, yes.

THE CHAIRMAN: All of that.

MR. CURTIS: Q. Would you be prepared, Dean Baskerville, to put a number -- a target figure perhaps that Ontario could implement within perhaps a 10-year time period as to what would be a reasonable size of a unit that a forester should be responsible for?

THE CHAIRMAN: Mr. Curtis, I would like if Dean Baskerville could consider that in the light of the output of the forestry schools in Canada, so that there is a practical aspect to that answer in terms of what is possible. Not just what would be nice.

MR. CURTIS: Fair question.

THE WITNESS: Actually I'm uneasy about the question, Mr. Chairman. I couldn't, out of context put, a number to 48-million hectares or whatever the number is, 40 some million hectares.

It seems to me the issue is, on the units where there is an active attempt to manage, there should be -- maybe a reasonable target would be to get down to the level where you had one professional per

hundred thousand hectares, or per 50,000 hectares would be -- given the numbers that have been bandied about, that would be a significant change.

Wouldn't get us to the other end of the scale, but in citing the Swedish case I didn't mean to suggest we had to go that far. We will manage extensive areas, they manage intensively on very small areas, we will manage extensive areas always.

THE CHAIRMAN: And what is the likelihood of that happening in the short term, are all foresters that graduate in Canada snapped up, so to speak, or is there an unemployment line somewhere?

THE WITNESS: That is a really difficult question to answer. My feel is, and it is a feel because we don't -- it's very hard to keep track of all those folks after they leave, that most get work, usually contract work, probably half get permanent employment in forestry, the rest get some form of contract work if they want it, but that about, looks like about 30 per cent go to some other area in any event, possibly not because the job wasn't there but because they wanted to go the other way.

Could we build that, would there be that interest. I think that is the crucial thing is that, not could you produce them, but could you attract

people interested in these tasks.

It might be a little slower on the start up, but if we adopted in this country a management I think towards the resource that was even 10 per cent the equivalent of the one that exists in a country like Sweden you would have a line up of people to enter the program.

The Swedish forestry school that I visited this summer takes 60 students each year and they choose from 600 applicants. They want to get in there because they know they are going to have an impact. It is an exciting area to work in and they are really doing something.

THE CHAIRMAN: Just out of curiosity what would it be like at the University of New Brunswick, how many would apply for first year as opposed to those who get in?

THE WITNESS: Probably take 60 out of a hundred.

MR. CURTIS: Q. Dean Baskerville, assuming that there was the interest amongst students to become foresters, assuming that governments such as Ontario decided to hire greater numbers in order to implement management systems such as we have been discussing this past week, do the schools of forestry

have the capacity to meet that kind of increased demand; and, if not, how long would it take them to develop the capacity?

A. Without actually knowing -- having some scale on the thing, that's an awkward question to answer. You could get 20 per cent increase in the number of students graduating from the seven schools without putting much strain on the system. Somewhere above that you get to the point where you need actually to change the system structurally in order to do it.

I would again caution that the issue here wouldn't be to hire more foresters, it would be to hire more foresters who would be engaged in a professional endeavour. If they are going to be used as bureaucrats, then you will find that there is some difficulty getting them to join the system, to enter it.

Q. Just perhaps one last question on that one point, Mr. Chairman. Without some kind of a change in the size of area the foresters are responsible for in Ontario, do you feel that it is possible to implement the kind of management system that we have been discussing here the past week?

A. The question was, is it possible, and I think I would answer to that, yes, that it would be

possible.

One would have to accept the level of quality would not be what it was if you had a higher proportion of professional minds engaged in design and implementation. I would argue that to begin with the limited number that is there, to begin to design management actively, makes the most effective use of the manpower, the professional capability that exists, but as you increase the manpower you will get much higher management effectiveness, better control because you will be tightening up all of the information loops.

There will be -- the more you increase the interaction of intellect with the problem, the better -- the more buffered the solution will be, the less likely there will be grievous failure.

Q. Moving on to another topic in your audit and in testimony you used the words accountability and responsibility fairly often. For example, you said that a person in the field should have ultimate accountability and responsibility. You stated that when all levels have approved plans everybody is responsible and no one is responsible.

Could you please just briefly try to encapsulate what it is that you mean when you speak of accountability and responsibility on the part of the

forester?

A. Somewhere in the structure there has to be a person or a small defined team, if that is the approach, who are held accountable not for having filled out plans and done things, but for what actually happens in the forest.

The issue here isn't: Have we got all the forms filled out; the question is: Did the forest react, has it been managed, has the output from the forest been what we expected. The number of calls that a salesman makes isn't as important as the number of sales, and I think that there is a tendency in the structure that I looked at in '86 for the accountability to be held in terms of where the administrative function is carried out as opposed to: Did the forest change, what is different in the forest now as a result of this plan than there was before we made the plan.

The accountability that I argue for is accountability in terms of the resource itself.

Q. Would it be fair to say then that the kind of responsibility and accountability that you speak about is related to wise management in the sense that foresters should be accountable and responsible to ensure that wise management actually occurs instead of,

as you said, ensuring that rules are followed; is that a fair conclusion?

A. Yes. I think that most humans will respond to whatever mechanism by which they are held accountable, we adapt very quickly. Whatever way we see we are being measured, we will report and react in that manner.

That if we want good management of the forest, a really important first step is to make the accountability in terms of what the forest does.

MR. MARTEL: Can someone with a million hectares or acres go out and check?

MR. FREIDIN: Sorry, Mr. Martel, I can't hear you.

MR. MARTEL: Pardon me. Can people who are responsible for a million hectares or acres in fact go out and check to make sure that what has been planned in fact is occurring?

In other words, can you monitor precisely what it is you are trying to get if you have got that much property to look after?

THE WITNESS: Well, it comes down to the issue of the quality of it. It could be monitored, you could fly over it, for instance, and look at it. Could a person see on a million hectares -- million acres --

MR. MARTEL: Yes, take your pick, when it gets that high, does it matter?

THE WITNESS: Okay. That would be of the order of 400 thousand hectares. It would be extremely difficult for one person to exercise control on an area that large. He could easily report that things had been done, but to actually evaluate by himself their performance, what had actually happened and what the response was, not without help, no, technical assistance at least.

It comes back again to how tight you want that -- how much slop you want in the system with respect to oscillation about the goal. If you want to approach the goal and stay close to it, we will need more manpower because the manpower, in this case, is the mechanism of the feedback control that we talked about in the thermostat, that is exactly where the manpower comes.

Q. You have said in the audit, Dean Baskerville, - this is on page 76 under the heading Whose Responsible - I will read from it, so it's not necessary for you to look it up. You stated that:

"Few signatories to a management plan believe their signing necessarily meant that the plan was 'good'..."

Good is in quotes:

"...in any sense beyond meeting minimum requirements."

Would it be a fair conclusion that you feel a signature of a forester should signify that the plan is good in the sense that it complies with wise management?

A. Yes, and clearly that if -- again, it comes back to what it is we want to achieve; and, that is, management of the resource and a person should be signing that he believes he can achieve management of the resource to the extent it's compatible with the manpower that he's got.

When a person signs and does it in a way that is not satisfying, you know, that they don't feel a commitment because they don't feel that there exists the power to make this -- these good things happen, there is no commitment back to the forest, you won't get good management that way.

Q. And, as you said in testimony last week, it's okay to have the plan amended upwards as long as it comes back down to the foresters for approval, so as not to relieve them of their accountability and responsibility.

Would you agree with a statement that

foresters, given a choice, should not implement or acquiesce in decisions or activities that are contrary to wise management?

A. I think I would agree with that, just in the general sense.

Q. That is the sense I meant it.

A. Pardon?

Q. That is the sense I meant it in.

A. Okay.

THE CHAIRMAN: But how do you get around the problem that the unit forester probably faces in that he puts forward a plan and a way of implementing the objectives, it goes up the line to the district manager who himself may be a forester and on to the region and on to main office of the Ministry, if it goes that far; at all those upper levels other considerations are brought in supposedly such as how this unit is performing in the context of other units, how the overall objective of wood supply for the province is being spread out amongst various management units themselves, and how does the unit forester respond to the direction from above which says: We want your plan changed because it doesn't fit into the overall provincial picture, or it doesn't take into account other things of which you, in your unit,

wouldn't necessarily be aware of, or find important or things like that.

You know, it's a management structure which imbraces the whole province as well as the individual units. How do you sort of tie that concept in?

THE WITNESS: The question, as I heard it, allowed that when there are changes above, if they are strategic issues like, we are over spending silviculture money in this management unit and double the amount we are spending over here because this is where we need it now, then that simply requires that the plan be rewritten now to be consistent with those, both plans need to be rewritten to be consistent with that strategic change.

Last week I argued that the safest way to approach this would be to build production possibilities from management units upwards and, as you do that you will be looking at provincial strategies which will then come back down, because there will be modifications to what can the resources -- manpower and dollar resources supply to any unit depending on provincial strategy. The key is to keep that consistent from top to bottom.

The one thing that you need to avoid is a

provincial strategy to produce, whatever it is, 20-million cubic metres per year that is not grounded in plans that come right to the earth and which, when you look at them, will in sum deliver them, can in sum deliver that.

I would argue that the protection against what you have just suggested would be a procedure where each unit prepared it's production possibilities, they were summed upwards through districts and regions to the provincial level in order to establish provincial production possibilities from which strategies are determined, which then go back down through the system to allocate resources which will then require an adjustment of the management plans at the bottom in order to maintain consistency.

That kind of up and down thing is, I think, essential in order to get a provincial strategy that is consistent with the actions that are happening on the ground. It's a perfect analogy to the regional forester trying to keep track, the unit forest trying to keep track of all of the actions on that half million hectare unit.

THE CHAIRMAN: And I take it you didn't find that happening in your 1986 audit to a large extent?

THE WITNESS: No, sir.

MR. CURTIS: Q. Dean Baskerville, I would like to, before moving on to my last topic, just touch on how these same principles apply to FMAs.

You said in your testimony last week that responsibility and accountability with respect to the FMAs should not be any different.

Do you have any suggestions to ensure that the accountability and responsibility on the FMAs will be at least the same as it is on Crown land or as it should be on Crown land?

A. One principle I would argue is the same, that the accountability should be pay-for-performance of the resource, not pay-for-performance of tasks, and that when the Crown enters into a contract with industry under a forest management agreement, that the emphasis in the contract should be on the way the forest is managed, not on just the things that are done.

It's the output here; it isn't forms filled out, management plans prepared and so on, the output is change in the forest, in the direction of improved control over the availability of timber and the other values.

Q. Okay. I would like to get into the

subject of what we'd call rulebook forestry or the discretion --

MR. CURTIS: I expect this is my last topic, Mr. Chairman, so...

THE CHAIRMAN: How long do you expect to be on it?

MR. CURTIS: Subject to questioning from the Board, possibly 15 to 20 minutes.

THE CHAIRMAN: Okay. Well, perhaps we will finish off your examination and then we will take the morning break.

MR. CURTIS: Okay.

Q. We have talked about rulebook forestry, Dr. Baskerville. You said, for example, that the authors of the manual did not mean to prescribe.

Is it your view that the designers of the manual intended flexibility and that there be sufficient scope for foresters to exercise their discretion and professional judgment?

A. In my view, the answer to that is yes, that the designers of the manual expected that they had provided freedom for professional judgment in determining the harvest schedule and the silviculture schedule and the things that we spoke of last week, but required a common format of reporting those actions and

outcomes so that you have to have the common format in order to be able to aggregate upwards.

The difficulty came when in the process of aggregating, particularly regions tended to say it must be -- the manual was not permissive, the manual was proscriptive and the main conversion from a set of rules -- for reporting management design to a set of rules, that this is the way it must be done occurred coming upwards through the region.

Q. Thank you. In your audit you noted some instances which were at odds with wise management, and just before getting to that point, I just want to assure you and the Board that it's not my intention to get into any specific examples here but merely to discuss it at a conceptual level.

On page 81 in the last full paragraph, I will read the part, you noted that:

"The files contained a disturbing number of instances where a directive was issued to make a correction in a manner clearly at odds with wise management."

The way that I read this is that if the foresters involved were left to their own discretion that they would have complied with wise management, but that the reason why these examples were at odds with

wise management was due to directives issued by individuals far from the forest effectively overruling the forester's professional judgment. Is that an accurate interpretation.

A. Yes, perhaps more general than I would be willing to go, but in principle, yes. That the kinds of things that tended to happen were adjustments to numbers and reporting structures so that they conformed, rather than recognition of the fact that there was a non-conformity that needed to be dealt with.

Q. So it wasn't infrequent that foresters were effectively overruled from above?

A. I think it would be fair to say that in all of six of the management plans that I reviewed there was evidence at some point of where some change, trivial or otherwise, had been invoked from the regional level.

Q. Were you aware of any MNR procedures or proposed that might prevent this from occurring?

A. I haven't been close enough to the structure in the last few years to answer that question.

Q. From the work that you did in your audit, would you agree with the statement that the MNR

bureaucracy is not responsive to instances that are contrary to wise management so long as guidelines and procedural requirements are met?

A. I'm sorry.

Q. In other words, as long as the rules are complied with, would you agree that the MNR bureaucracy is not responsive to instances that are contrary towards management?

A. At the time of the audit I think that is a fair statement, yes.

Q. You indicated at one point last week that there are few areas of well managed forests on public lands, but lots of examples on private lands.

Would you agree that allowing foresters a greater scope to exercise their professional discretion and judgment could help us improve the record of management on public lands?

A. The underlying problem here is the notion that Hardin wrote about in Tragedy of the Commons. The issue has come down to access is access controlled. If you have a situation where a new entrant to the Commons comes in, a new mill is added without a reconciliation of future availability of the product, a forecast that says the raw materials that mill will need has been specifically forecasted, those

are the kinds of things that get us in most trouble on public property.

I have argued as persuasively as I can that it's a mistake of unfortunate proportions that in Canada we value forests only for the jobs they can produce and not for much else. So that if you can add more mills to a management unit, it has been fairly easy in this country not to force the reconciliation of wood supply over the long term.

I think that in -- we have a problem not here alone, but generally with accountability of management for -- and it's connected obviously, that if wide accountability for timber production and consistency of production of both quantity and quality for the mills, there would be some leverage on the number of entrants.

And I think that again, because we haven't valued trees or forests so much as we have valued jobs and the taxes from mills, there has been inconsistency or at least a lack of consistency in the amount of funding put to managing the resource.

Q. Thank you. One last question. I want to pursue a point that the Board raised last week with regard to professional discretion. The question from the Board was - and I'm paraphrasing - what

happens in the event of a conflict of professional judgment between two foresters, one in the field and one higher up. Your response was that it is rarely a difference of professional judgment but rather the imposition of guidelines as rules from higher up.

Would you agree that in the exercise of professional judgment, the professional buck as it were must stop somewhere, and that the place it must stop is at the level of the forester that is implementing the management system?

A. Yes, I would agree with that, that there needs to be a place where there is clear accountability of a person or a very limited group, pay-for-performance of the forest. The Peter Grecher wrote extensively on the area that where you spread accountability and responsibility what it does is relieve people of the need to perform.

I think the phrase he used, where everybody is responsible nobody is responsible. The most important single mechanism I think in the people part of this thing is to get accountability. People will perform to the -- perform in the manner in which they are held accountable.

MR. MARTEL: But they have to have control over the way they are going to manage. I mean,

certainly they can't have constraints placed on them keeping in mind professional judgment and everything that goes with it, they must be in control to be held accountable.

THE WITNESS: They must have -- be in possession of the necessary tools to control the things they are held accountable for, yes.

MR. CURTIS: Those are my questions, Dean Baskerville. I'm afraid I have taken a bit longer, Mr. Chairman, than my original estimate, but it was an interesting discussion.

THE CHAIRMAN: I'm sure we added to your discomfort.

MR. CURTIS: Not at all. On behalf of OPFA, we appreciate very much the opportunity to question Dean Baskerville.

THE CHAIRMAN: Thank you. Well, ladies and gentlemen, we will take a 20-minute break at this time, come back to hear from the Ministry of the Environment.

The Board would also like the opportunity to welcome a visitor from Sydney, Australia, who is observing the proceedings today, Professor Ben Boer from the University of MacQuarrie who is a law professor in environmental matters from that

university.

Professor Boer.

We will adjourn until eleven o'clock.

Thank you.

---Recess taken at 10:40 a.m.

---On resuming at 11:05 a.m.

THE CHAIRMAN: Thank you. Be seated, please.

Ms. Seaborn, just before we commence, I would like to make an announcement for everybody involved with the hearing.

The court reporting firm, Farr & Associates, has informed us that they are going to host a small reception for anyone who may be involved with this hearing after today's session, approximately around five o'clock in their suite which is in this building, Suite 709.

All of you are cordially invited.

MR. CASSIDY: Will there be a transcript taken?

THE CHAIRMAN: There may be a transcript but it won't be a one-day turnround I would suggest. And anything you say you probably wouldn't want to see in print, Mr. Freidin.

THE CHAIRMAN: Ms. Seaborn?

MS. SEABORN: Thank you, Mr. Chairman. This may be an incentive for both myself and Mr. Freidin to speed things along today, so we can finish.

THE CHAIRMAN: Well, even if you don't, we are going to cut you off at five so we can attend.

CROSS-EXAMINATION BY MS. SEABORN:

Q. Dr. Baskerville, I have a couple of questions arising from Mr. Curtis' cross-examination. In the area of training, I would be interested in knowing the extent to which courses dealing with adaptive management and integration of non-timber values are new to a forestry program?

A. The actual concept of adaptive management emerged in the late 70s, so that courses that dealt specifically with that would be fairly recent.

The concept of integration has been around for a very long time and, as I said earlier, the process or the -- yes, the process of integration has been -- when I was an undergraduate it was part of the management element of the total program. So that the idea of integration has been around a long while, the problem is to get the pieces that you could actually integrate.

Q. And in terms of adaptive management,

how many years would that course have been offered at your university?

A. It would be a part of the way we teach management certainly from 1982 on and since I was involved with the people who wrote the book on adaptive management from about 1972 on, my contribution in that period would also have -- I would have discussed the ideas of adaptive management.

Q. Thank you. Dr. Baskerville, do you have a view as to the extent to which people outside of MNR should be involved in planning teams?

A. Extensively in goal setting, it would seem, because many of the issues involve groups that aren't directly covered, I guess -- directly covered by OMNR. You need involvement of the people or groups who are influenced by change in the pattern of the forest over time, because what we are talking about here is timber management changes the pattern in the forest, the argument is that changing that pattern is altering the availability of other values as well as the value of timber, and that if a group is having its values altered, then the availability of values altered, then presumably it should have access to the planning process.

Q. And would that extend to

professionals outside of MNR who may be professionals with respect to various non-timber values?

A. I'm not sure I understand.

Q. Well, we have talked about wildlife biologists may be within MNR; however, there may be in the public per se wildlife biologists who may have an interest in how we manage Crown lands. And would you consider that participation from those people would be useful in the goal setting process?

A. Quite probably usefull in the goal setting process, but risky when you get to the management design process, because a person who is outside the structure bears no responsibility for the outcome and the last thing you want is a designer who is in no way accountable for his actions.

Q. Thank you. I would like to have a look for a moment at one of the papers that you wrote.

MS. SEABORN: And it was filed in the Panel 8 witness statement, Mr. Chairman, which has been marked as Exhibit 378. I don't think it's necessary for the Board to go to it. I would just like to read one sentence to Dr. Baskerville and ask him some questions on that statement.

Q. Dr. Baskerville, it's the paper called: Adaptive Management, Wood Availability and

Habitat Availability.

A. Yes.

Q. And on the second page of that article which appears at page 364 of the Panel 8 witness statement on the left-hand side of the page you will see the last full paragraph, right above the heading Management in relation to stands and forest.

A. Mm-hmm.

Q. The last sentence of that paragraph reads:

"Adaptive management is not easy because it requires explicit negative feedback control and explicit recognition of error; it is, therefore, not common in resource management."

In a practical application of adaptive management, would observations of effects in the field or monitoring be one way of providing feedback to a resource manager?

A. To the extent observations are related to the actions, yes, but simply taking observations in the system, I'm trying to -- if we simply measured the total area of the spruce working group and monitored the area of the spruce working group in a forest, to use as an analogue rather than an

environmental one, it would be possible to maintain the area but not have the quality of material that you wanted in that. So the monitoring has to be related to the thing you are trying to manage and the objective.

If the objective is set in terms of not just area of spruce but the quality of spruce available regularly for harvest, then the thing you need to measure -- things you need to measure are those things that are associated with the production of quality.

Q. And would you agree that the sooner that you get your feedback, the sooner you can modify your actions to reach the objective?

A. Yes, that's correct. The trick in a distributed resource like a forest is to find the timing of a response measure that you can pick up. If you are talking about a half million hectares, you have to have implemented actions long enough to be able to detect, at a half million hectares, the impact.

Q. One of the statements you made this morning was that the - and I hope I have it right - the number of calls you make is not as important as the sales, and I thought that was an interesting concept in terms of managing the resources.

Now, would you agree that based on adaptive management assessing compliance alone would

not be sufficient to revise your forecast to meet your objectives?

A. What context is compliance?

Q. Compliance --

A. Compliance to rules?

Q. Compliance is used -- no, compliance is used in the context of saying: We are going to go out and check to make sure that what we said we did we actually did, and so it would be in a checklist format.

You are saying we said we would go out and cut 10 trees and we went out and cut 10 trees and that is all that you would be noting, rather than going further than that.

A. Well, that would verify that, in fact, the actions prescribed had been taken, but would not leave you any wiser as to whether or not the actions taken had the desired effect.

And in terms of managing the resource, the target again is availability in the resource over time of timber, wildlife and the other elements. So that it is possible to have compliance with a proposed set of actions and not be closing on the goal.

If there is any defect in any of the system dynamics for example, for instance in the context of timber that I showed on -- last Monday

morning -- Monday afternoon I guess it was, if there are any errors in the description of the system dynamics, then the rules that you would write down would be defective to some extent in terms of controlling the system. So compliance with them wouldn't necessarily assist and achieve system control.

Q. One of the things we have talked about quite a bit in this hearing has been public participation and, in your view, would you agree that in order to have public participation in setting objectives that the feedback should be summarized in such a way that the public can have access to and understand that feedback?

A. Feedback from...?

Q. Well, feedback in terms of your setting -- in terms of adaptive management, going out and setting your goals and constantly using the feedback loop to revise your forecasting.

Now, if the public is going to participate in that process, would you agree that in order for the public to do that they have to also have access to the feedback the same way as the unit forester or the planning team is going to be, hopefully in adaptive management, examining the feedback?

A. It seems to me there are two stages

that are distinct here: One is at the creation of a plan there needs to be some choice among alternative objectives for the property and that those objectives have to have consistent management designs that go with them that could conceivably deliver them over time. The public clearly, if they own the property, should have a say in the choice of objectives.

THE CHAIRMAN: And did you go as far as to say they should have a say in also developing the choice of objectives, or the choices are developed by others and then the public exercises the choice, or has input into the choice?

THE WITNESS: I think there is the potential for a loop, although right now the most characteristical feature of resource management is a lack of richness in objectives, it's either this or that, there are only two choices: Do it or don't do it, rather than: Here are 20 different management strategies which reach perhaps as many different objectives or perhaps 20 ways to reach one objective. But it's the absence of richness in the discussion of objectives that I find distressing.

The second place where they enter, which I think is the feedback issue, is that after you have made a step of five years or some time where you have

attempted to implement actions in the resource in order to control the availability of timber, the availability of habitat, there needs to be periodic reconciliation of what the resource is doing with what the objectives were.

And I think the question was, that should the feedback that does that, that makes that connection, should that be exposed, is that the...?

MS. SEABORN: Q. That's correct.

A. Yes, it certainly should in aggregate form. We could argue about the level at which it was, but I would feel more comfortable as a citizen if I could see closure on the goal, the degree of closure on a goal.

THE CHAIRMAN: Well, can we argue for a moment on the level, because that has occupied some discussion at this hearing.

Is it your view that it is enough to provide, in terms of what the public sees on the public record, summaries of the various results and observations, or does all of the background material have to be available in detail for the public to be able to get a sense of whether or not there has been some closure on the goals?

THE WITNESS: The easiest way to define

that, it seems to me, would be that whatever basis the choice of objectives was made, whatever the level of aggregation was at which that was reached, then the feedback should be at that level, and it's certainly no more aggregated than that, because that was the level at which the choice was made, so presumably a comparison should be made.

If you get down in the evaluation to individual hectares, I think that the discussion tends to become so anecdotal to that it's very difficult to sort out whether the objectives are met at all.

THE CHAIRMAN: If I might just interrupt there. Are you looking -- in terms of the public being able to understand what is going on, are you looking in terms of the public at large or the public which also has, if it's a particular group, its own experts with a degree of expertise that the Ministry has?

In other words, are you considering the public in terms of having its full bevvy of experts on side as well to be able to evaluate every last detail, or are you considering the public in this context as the average resident or the average hiker or tourist, or hunter or fisherman, to use some examples?

THE WITNESS: At least at the end of that continuum there are two pretty distinct groups; there

is the public who simply want reassurance that there was an objective set and that there has been progress towards it and they will accept the manager's report, and then there are the public who are interested in the particular resource, interested to the extent that they in fact study the dynamics and want to look at a more detailed evaluation.

I suppose by the nature of our society all of the information will be available or must be available through the freedom of information. If it were me looking for system control, wanting to make sure that what we got in the forest was what we were aiming for, I think I would be more inclined then to have narrow interest groups trying to promote their particular interest alter the objectives literally unilaterally by getting in there and intervening.

If I could be so bold, I think I would suggest an independent audit, but someone whose bias was not for one of the elements so much as for: Did this structure, did this management structure, given these objectives, lead to those objectives and where are the deficiencies, because the issue really at each of these reviews whenever they come is you either modify the goals, the objectives, or you modify the actions when there is an inconsistency of what you

wanted and what you got.

And presumably you don't want it -- you don't want it done in a biased manner, so you either have all of the players review it again at each period or you have someone say: Look at the structure and assess it.

THE CHAIRMAN: I hope you are not suggesting another timber management hearing in the very near future?

THE WITNESS: Oh, at the scale I had in mind - perhaps we are out by an order of magnitude here - the scale I had in mind, the only scale at which I believe this is practical would be at the level of the management unit. I don't think that you can make a reconciliation that is sensible at any higher level of aggregation. At any level of aggregation higher than that you lose context of the actions and the response in the forest.

MS. SEABORN: Q. So, Dr. Baskerville, you would look then at the management unit level for this reconciliation, and I think your evidence earlier was that the level of aggregation would depend upon which -- on the level of aggregation that was available when you set the original objective in terms of the second step, the reconciliation step?

A. It should be at least that, at least consistent with the material that was available the first time around.

Now, if you have learned - and presumably we should at each one of these steps if we do it right - then you may be able at each step to improve the resolution, if you will.

Q. Right.

A. The precision. of it

Q. And so presumably over time you may become -- over time you are more likely to become more precise rather than less precise?

A. I would argue that if you followed an adaptive approach that should happen. Even if you simply managed in the traditional sense, there is a high probability that it would happen because you are forced to make periodic reconciliation.

Q. And just looking at a simple example, suppose your objective was to produce 10 moose on a particular piece of geography and you found you were only producing 8 moose, then with adaptive management your forecasts would have to be redone?

A. The issue would be first why 8 rather than 10.

Q. Right.

A. Because one of two things is wrong; either the forecast of moose response to habitat was inaccurate or the actions that were taken in the actual forest were not consistent with the plan.

Q. And just following from that example, the same process would have to be applied if you found that you were producing 12 moose on a particular piece of geography while your objective had only been 10 moose, it's still the same process is my point?

A. Exactly.

Q. Okay.

A. The issue is, you made a forecast based on certain understanding of dynamics, you have tried to implement the actions that were consistent with that understanding, and when you detect a difference that is significant - and, you know, depending on the area, two moose could be quite significant if that was a target averaged over a whole unit that would be a significant difference - then the prudent approach is to discover why you didn't get what you forecast; was it because your forecast was inaccurate or because your implementation was inaccurate.

Q. Dr. Baskerville, when you use adaptive management you are essentially managing the

structure of the forest; is that correct?

A. Forest management generally is in fact the control of structure of the forest over space, over time.

Q. And if you are managing for late winter moose cover, you would need mature stands for example?

A. Yes.

Q. And this could mean that certain stands would have to be bypassed and not harvested because you are providing that late winter moose cover.

A. It could. I'm more comfortable thinking of it in terms of availability, what is desired is stands of a particular characteristic available continously for moose habitat.

Now, if you want them in the same place all the time, that's impossible, but if you want them within an area, some of that kind of stand available continuously, that's quite possible; the larger the area you make it, the easier it is, but you want it within the confines of the normal moose travel.

The issue, it seems to me, is one of availability, not to say that you can't cut something, but that you want continuously available the kinds of stands that moose require for wintering.

Q. And what we have been discussing in this hearing has been the use of guidelines and essentially what you would view as constraint management.

Now, in terms of constraint management, these bypass stands may constitute a reserve; is that correct?

A. A reserve in what context?

Q. A reserve for moose. Under the guideline approach, if you bypass a stand in order to provide moose habitat, it is considered a reserve; that's one term that's been used for that sort of an area?

A. So that it's out of the timber base?

Q. That's right.

A. Yes. What you are saying now, in that context, is that the timber and the moose are now being managed on two separate -- they may look like the same land base, but in fact you have got two layers and you have simply taken out of the timber base the part that the moose is using for that.

THE CHAIRMAN: But it may be within the same geographical confines though?

THE WITNESS: Yes.

MS. SEABORN: Q. All I'm suggesting, Dr.

Baskerville, is that for example the reserve might be viewed as a constraint in one system; i.e., the guideline system, whereas in the adaptive management system, those stands that you bypassed provide late winter moose cover would actually be a component of the forest structure?

A. The risk here is that in setting a reserve and literally removing that part, that habitat requirement from the timber reserve, you presumably allow the rest of the timber area to be managed out of the context of that particular element, so there won't be any moose reserve in what happens on the land available for timber.

You know, worst-case scenario, sooner or later this moose reserve falls down and because you haven't looked to maintain the availability of such material in the timber plan there won't be any alternate place of equivalent stand characteristics locally. So there is a distinction in how you could achieve, it may look like the same thing, but what you could achieve are quite different; they're different approaches.

One simply removes it and says: If I keep it for all time the moose are all right, but they aren't, if in fact the remaining part of the forest

does not cover the fact that sooner or later that stand will fall down from old age.

THE CHAIRMAN: But wouldn't you set up reserves for moose at different age structure levels? I mean, you wouldn't just say: The only reserve for moose is going to be mature timber, realizing that it is going to fall down and, if you don't also set aside a reserve of immature timber, that you will never get to the mature timber stage again as a reserve.

So aren't reserves in fact set out amongst different age-classes to cover that eventuality?

THE WITNESS: You really have earned your degree.

THE CHAIRMAN: Can I go home?

MR. TURKSTRA: Post-graduate is about to start.

THE WITNESS: In terms of forecasting availability, that's exactly what you would need to do, you would need to see that the age-class structure that was going to emerge over time in a limited area would have moose -- the particular kind of habitat available, which means there has to be younger stands somewhere in the neighbourhood all along.

It would be interesting to actually

examine the guidelines, but my recollection of the ones I've seen is that they all key on what the moose would use now and that the element of what will be available over a continuing period of time is a piece that's missing.

MR. MARTEL: Yes, but by the very fact that you are cutting in the vicinity will indicate what; I mean, that you are going to have new stuff.

MR. FREIDIN: I'm sorry, Mr. Martel, I can't hear you.

MR. MARTEL: It's off again.

I am saying that even given that, what you cut now will ultimately bring on stream some of the requirement for the moose over the fact that you have left some mature standing, you are still going to have new type of vegetation that emerges.

THE WITNESS: Mm-hmm, that's true. The scale of this becomes really important. Supposing on 1,000, 2000 hectares you left 100 hectares of that habitat in the centre and clearcut all the rest, in the part of the world we are talking about the opportunity to cut, the availability for harvest of huge areas is common because they tend to have large areas of one age-class in the natural forest.

So that the potential would be there

unless you placed a bunch of these reserves, but even if you did that, then you could still have the interspersing area all coming up in one age-class and if the moose habitat shelter fell down before they grew up, you'd have the problem.

The difference is between one of trying to constrain and to manage for availability. Management would actually intentionally create the availability of that kind of habitat continually rather than hold some of it temporarily.

MR. MARTEL: You would have to look at a rotation then, wouldn't you--

THE WITNESS: Exactly.

MR. MARTEL: --trying to establish over the rotation what in fact you are going to have over 80 years to supply habitat for moose?

THE WITNESS: I would say that it would be the minimum. Forecast period would be roughly the length of whatever rotation for whatever species you were working with.

MS. SEABORN: Q. Just in that regard, Dr. Baskerville, could you turn to page 47 of your hand-out which is Exhibit 970, the bound book. This was your overhead presentation.

A. Sorry, which page?

Q. Page 47. And this I believe was showing the progression to the managed state?

A. For area regulation, that's correct.

Q. That's right. And we have the bar charts on the left-hand side. Now, the two bar charts on the bottom of the page, T-60 and it T-80, there are no stands beyond rotation age with respect to those two charts; correct?

A. That's correct.

Q. Now, based on this hypothetical, how would you provide habitat in adaptive management for species that rely on the mature or overmature forest?

A. Let me understand. By definition in the way this is done, a 60 year-old stand would be mature. So I think what you are asking is: If you require the characteristics of a stand that's between 100 and 120 years old in order to constitute moose habitat, how would you maintain it?

Q. That's correct.

A. It would be a matter of, if you can imagine it, maintaining a portion of the forest; instead of having one block, the balanced structure instead of looking like this, would have something like that on it. (indicating)

Q. I see.

A. A portion of the forest would be carried to a longer rotation, if you will. With area regulation it is possible to deliver that.

THE CHAIRMAN: But that would occur naturally in any event because of the difference in site classes; would it not, for the same specie?

In other words, the same specie isn't going to grow at the same rate on every site class--

THE WITNESS: No, that's correct.

THE CHAIRMAN: --because of the differences in the site classes themselves, even if you use silvicultural techniques to try and improve the growing ability?

THE WITNESS: That's correct. The examples I used are very simple. One site, if you recall, one growth curve.

Even in the complex forest though, if the poor sites and the pattern weren't where you wanted to have the stands that possessed the characteristics of that age-class, then the only way that you can generate them is, for part of the forest, to use a rotation that that's long and you will generate a proportion of the area out there.

MR. HANNA: Mr. Chairman, just for the record, that part that you are referring to, Dr.

Baskerville, is the older age-classes?

THE WITNESS: Yes. The age-classes that possess the characteristics that you are trying to maintain.

MS. SEABORN: Q. Can the same overmature stands be generated under a volume regulation scenario?

A. Yes, the principle is similar.

Q. And do you see any problem in terms of adaptive management in delivering overmature stands in a practical sense over a period of time?

A. To make sure I understand the question, are you asking in a practical sense is it to switch easy - possible to switch from a pure regulation to a regulation that's mixed in terms of the structures that it maintains?

Q. That's correct.

A. Yes. I see no -- the existing tools would permit it.

Q. Thank you. Last week, Dr. Baskerville, I believe you said that a manager needs a prescribed approach to making a decision but not a prescribed decision; am I correct in that?

A. Could you give me a hint as to context. I'm sure I said words like that last week, but...

Q. In terms of manager's flexibility, I believe was -- you were talking about the sense that a manager doesn't need to be told precisely what to do in the sense of saying: This is going to be the decision you are going to make?

A. Yes. I think the point I was trying to make is that if you want to design the evolution of a forest structure like that you can set it as a target, but if you -- and you can measure progress towards that target of the manager, hold him responsible to deliver that, that a certain proportion of the area does in fact reach that stand condition.

That's a safer procedure, I think, than writing a set of regulations literally in the sense that they are used in s legal sense. You could write a set of regulations that would cause that to happen, and the difference is that in the application of the regulation there would be no learning; whereas in the application with respect to managing to gain that, where there was local responsibility and a local attempt to close on a goal, there would be learning both with respect to how to do it and with respect to the way it -- the availability of that age-class satisfied the need of the moose if that was the case.

Q. And, Dr. Baskerville, your evidence

was also, I believe, that adaptive management has to be open and accessible, and I should probably refine that in light of the comments that you made earlier about public participation and participation in terms of setting objectives.

A. The process, whether it is management or adaptive management, in a publicly owned resource there needs to be periodic review of: Are the objectives being obtained and are they still relevant. And I think that those two issues need to be addressed by the owners periodically and that requires public participation.

Q. And in resource management generally, whether one's using adaptive management or constrained management, they are going to have to be trade-offs; are there not?

A. Yes. Trade-offs will occur if more than one element -- more than one value is being managed at the same time on a property. If you want simultaneously available the conditions that will provide suitable habitat for a pulp mill and 10 sawmills to graze on and for a population of moose to graze on, some trade-offs will occur.

The difference is that if you use a management approach those trade-offs become explicit.

Someplace, even if we don't write it down, it is going to be possible to see, to determine how much -- how many cubic metres per year you traded off for a gain in moose habitat.

If a constraint approach is used - and I wouldn't call it constrained management because I think that's an oxymoron, there is a contradiction in terms there - if you use constraints, you don't see those; the trade-off has been made, but you never see it explicitly laid out. That would be the difference.

Q. And in adaptive management, would you foresee that trade-offs should be documented in a timber management plan at the management unit level?

A. Yes, that would be a prudent thing to do.

Q. And in response to one of Mr. Hanna's questions last week you have referred to --

THE CHAIRMAN: Excuse me a second, I just want to clarify this last answer.

MS. SEABORN: Sure.

THE CHAIRMAN: If you are saying that the trade-off should be explicitly set out in the timber management plan, does that assume that you are managing both timber and, say, wildlife in the same way on the same geographic unit as opposed to the way it is

presently managed by the Ministry; and, that is, there are wildlife management plans where some of those objectives and values are set out in that plan, and there are timber management plans which are separate on a different land base as it is now.

I assume you are making that statement on the presumption that we are practising integrated resource management in the context that you explained earlier last week?

THE WITNESS: That's correct. I understood the question was: Should the trade-offs be written down, not should the constraints be written down.

MS. SEABORN: That's correct.

THE WITNESS: So the trade-offs should be and the rest of the confusion was not -- if I had answered it yes to constraints it wouldn't have made sense, but ...

MS. SEABORN: Q. Dr. Baskerville, last week you were discussing with Mr. Hanna the extent to which we are in a position to move toward adaptive management today. And in terms of a practical application, I believe you told Mr. Hanna that you could probably add 10 pages to the Timber Management Planning Manual and you would be able to implement

adaptive management.

And given that in your audit you did have a look at the 1986 at least Timber Management Planning Manual, I am wondering if you could elaborate for me on the types of things that you would see as being important to be included in order to implement adaptive management?

A. In really simple terms, the key would be to include a specific forecast of the values you are trying to maintain, to include a specific measure of each review of the values you actually obtained and to provide at each step - whether the first one at each review - an explicit statement of the actions taken and the way in which those actions are expected to cause the effects you are looking for and I think I could write that in 10 pages.

Q. Thank you.

MR. MARTEL: Do you mind repeating just that last one?

THE WITNESS: A linkage, a statement of how the actions proposed would cause the effects claimed.

MR. MARTEL: Okay.

THE WITNESS: Because the learning process, Mr. Martel, that you are trying to build here

is of how the system works as well. I mean, we would like to learn about each step, more about the dynamics of the system, and rather than simply presume cause/effect and take actions and not assess it, one of the things you want to be looking at very carefully is: Have I more or less reason at the end of one five-year period, for instance, to believe the cause/effect connection that I started with. The yield curve, if you will, for timber or the equivalent habitat pattern for moose.

MS. SEABORN: Q. This morning with Mr. Curtis you were discussing your view of the Timber Management Planning Manual, and I believe your evidence was that you saw the requirements in that manual as being direction only for the forester and what was in the manual was a common way of reporting actions that they had taken or results; is that correct?

A. Not quite. There is in fact a quote in there from the manual that suggests that it was designed to be a systematic way to report actions and responses, and what I found was -- and it wasn't saying that the guidelines for spruce, it said the rotation is 95 years old or about that and so on, meant that you actually had to use exactly all of the numbers that were there; but in fact what happened is that the

system, as it actually was put in place, grasped the guidelines and converted them to the power of law and said: If the rotation for spruce on site class 1, if the guidelines say about 95, then 95 it will be. If you put in 90 or 100, there will be an exchange of letters saying why didn't we do it right.

There may have been, for instance, if you go back to the discussion we just had, to generate this, to put that stands -- make available stands of the characteristics that we wanted, it will not be possible to evaluate a timber management plan by the current guidelines and silviculture; you will intentionally violate them but, for good reason, to generate a different value.

THE CHAIRMAN: And you don't feel that a system that has the guidelines set out but also provides if it is implemented in this fashion for deviation wherever necessary from those guidelines, with a proviso that the deviation is reported - in other words, where a deviation is required, it has to be noted that it is a deviation - if they are applied in that fashion, would it be acceptable to you, in your view?

THE WITNESS: To me in my view? No, sir. The procedure you've described, it seems to me, would

freeze. It would say: We know exactly everything we need to know about this except possibly a little bit, so we will leave a little room which will have to be noted each time.

THE CHAIRMAN: So it is flexibility by way of exception--

THE WITNESS: Yes.

THE CHAIRMAN: --as opposed to flexibility as you learn more?

THE WITNESS: Exactly. That's right on.

THE CHAIRMAN: Okay.

MS. SEABORN: Q. And, Dr. Baskerville, going back to my question in this area, what I am really looking at is, do you have any difficulty with a system whereby there are common reporting requirements for the management units, but that is not to say that the managers have to take the same decisions, and I am looking at it more from an administrative point of view of someone who is outside looking in; whereas you have a manual there where people will fill out certain tables and provide a certain level of information, and that is not to say that foresters or managers cannot make whatever decision they choose in exercising their professional judgment in terms of clearly a mechanical level of information.

Do you have any problem with common reporting requirements?

A. None at all. In fact, I think it needs to be a requirement. The issue is whether the common reporting requirement gets transformed bureaucratically into one rule.

In the 117 management units, each one has a unique forest, each one has a unique set of mills, each has a unique pressure of hunters, fishermen, each has one has a unique moose population, each one is in fact unique.

The management of each of those units should be suited to the unit, but if you think back to our earlier discussion this morning about being able to aggregate upwards, there must be a system of reporting of management in each of those units that allows aggregate upwards -- consistent aggregation upwards so that you can -- there is a possibility to examine provincial strategies.

Q. And, Dr. Baskerville, just following up from a response to the Chairman this morning. I believe you just said a couple of moments ago that deviation tends to freeze decisions in time by operating by way of deviation reporting; is that correct?

I wasn't quite clear because I was asking the question in the context of managing a resource by the use of constraints, whereas I understand that using a deviation reporting system in adaptive management would be a contradiction in terms?

A. Yes. My understanding of your question, Mr. Chairman, was: If you wrote -- said that there really was a rule for all of these things and you said: Follow the rules, but when you realize the rule is wrong reported as a deviation, would that work.

THE CHAIRMAN: Right. Which is the way, to some extent, that is carried on now with the reporting structure for deviation reporting.

When you are not going to follow the guidelines within certain ranges, then you have to report. There is some flexibility within the guidelines themselves, but when you go beyond what the guidelines set out as the range of flexibility, there has to be deviation reporting and somebody up the line then either confirms the deviation or doesn't.

MS. SEABORN: And just to be clear, Mr. Chairman, my question was in the context of Dean Baskerville's earlier evidence that we are never going to do away with constraints completely.

So putting adaptive management aside in

terms of managing a resource by the use of constraints, would he see a deviation reporting scheme as allowing a resource manager flexibility to make decisions within that constraint management system.

THE WITNESS: We could argue, I would say no it didn't and you could say yes it did on the grounds that it depended on who the regional director was or the regional forester.

The fundamental point is here, if I could make it, is that approach takes the eye of the manager off the target. The target isn't to follow the rules, the target is to control the forest so that it has available over its space, over time the desired characteristics that suit sawlogs, pulp mills, moose wintering habitat, moose calving grounds and so on and so on and so on, and my argument is that rather than focus on a set of rules we should be focusing on a system, the system we are trying to control, it is the target.

Q. I understand that, Dr. Baskerville, and the example I am thinking of is, there may be a member of the public, an interest group who has a certain interest in a potential environmental impact that we know very little if anything about, so for their purposes they would rather see a manager going

out and being conservative with respect to protecting that resource. It may be that you would have a guideline in place that would tell you to always leave a reserve around that resource.

Now, the manager who's out there may say: In order to manage the resource properly I don't think that I need to apply this guideline and I can show you the results of not following this rule and, in that context of constraint management, we learn in areas whether or not we need to have rules or not.

A. I would argue that we don't learn in those cases, you simply learn whether or not the constraint was put in place, but you don't learn anything about the system response.

And, again, the focus should be: If we are concerned that there is a value that we don't understand and that we could do damage to, sideswipe as it were in the design of something, then that -- in the design we should be looking to discover as quickly as possible, maybe by starting by constraining entry to that part of the forest, but certainly learning as quickly as possible what the tolerance limits were there for that value, how do we produce that value.

THE CHAIRMAN: But wouldn't you argue that the appropriate manager with the appropriate

expertise would recognize that he knows little about the cause/effect relationship and, therefore, would be conservative whether or not there was a constraint imposed?

In other words, if there is a problem out there upon which you don't have much data or you don't know much about, you would be prudent likely and in effect create a reserve, if that's the prescription required, whether or not the guidelines prescribed them.

THE WITNESS: I think that's a fair statement. It seems to me that the risk here is that as soon as you constrain and take something out, you have relieved the manager literally of responsibility to learn about it. It is taken care of.

And the risk -- well, all you have to do is look at the problems that we are discussing, which have been known for at least the time I guess that I have been a professional forester, and we are still talking essentially about the same problems because we dealt with them as constraints all that time and no one was caused to really learn how altering this pattern in the forest influenced this particular value.

You just -- constraint makes it possible not to have to learn and we shouldn't have that in our

system.

MS. SEABORN: Q. And presumably improved data collection is one way of overcoming the difficulties that you foresee?

A. Targeted data collection. We don't need more data, we need the right data and the -- I wouldn't begin by saying that we had to maintain all the things we have got and add to them, I would begin by saying, again, what are the elements of the system we are trying to control and what data do we need to measure those things and what data do we need to measure the cause/effect actions, the connection of actions to output.

So given the cost of gathering data on even a management unit of a couple of hundred thousand hectares, it is because of the spacial dimensions very costly and we should be very thoughtful about what data we gather.

Q. Just in that regard, Dr. Baskerville, could you turn to page 68 of Exhibit 970 which, again, is your overhead presentation.

A. Yes.

Q. And these are the series of graphs that are representing sensitivity under volume regulation.

A. Yes.

Q. Now, I just want to clarify. I wonder if you could clarify for me some of your evidence-in-chief with respect to this overhead.

You talked about spending money in areas 1, 2 and 3 based on sensitivity analysis and I don't know to the extent to which this is theoretical and to the extent to which you can give me some practical examples of the sorts of things that you would be spending money on in those areas.

A. In the example there is a yield curve that goes up and comes down and the suggestion is that error, in this particular case in the slope of that decline, would have a smaller error there, but would have a very large impact on the sustainable harvest and that's an awkward thing to study because if you went and looked at virtually any yield curve that's in the literature it wouldn't even show that; it would show the curve going up forever and ever out there.

It is only when you get to imperical yield curves that in fact you will find that there is a recognition that stands do grow old and break up and begin to fall down.

What's awkward about this particular one is that it's -- whatever money you spend on it, it's

crucially important to your survival over the next 40 years and meaningless beyond that because the intent is you will never see another stand grow that old again in a managed forest, so it is something we are going to see.

It is a major problem during the period of conversion from a wild forest to a managed problem but a non-problem thereafter, and it is awfully difficult to get people to spend money on something like that.

Q. What you --

A. The one that could get you in trouble most rapidly in that particular forest.

Q. I think on page 68 that particular slope would be depicted by the No. 1--

A. That's correct.

Q. --on the graph under natural. Now, what do you mean by spending money? What sorts of things are you envisaging when you say we have to spend money in this area?

A. What's the magic to get this thing... If I just put it up here it will be easier I think. That was the one that we were looking at.

Q. That's right.

A. The Province of Ontario certainly

spends money on growth and yield research. I don't know how much, but I know that there must be some. What I am trying to suggest here is that for whatever budget you've got, for this particular forest unit the wisest place to spend the money would be on the things that were most likely -- where error was most likely to cause you a problem.

The curious thing is that if you went and looked at this yield research, one of the first things you would find is that there is great argument about what the maximum volume achieved would be because that's clearly the thing that we think of in terms of rotation, for instance, what's the maximum volume that the stand will have when it is at maturity.

But in the period of transition from a wild forest to a managed state, no stand will be cut at rotation and no stand -- the only stands that will be cut out at that age are these ones in the present forest, and by the time you reach a managed state the stands are cut unless they are retained for the purposes we discussed earlier, to go out further, they are going to be cut way down here on the yield curve.

It's a question of taking available funds to study the characterization of the dynamics in the forest and spending it on that part of the dynamics

where error could make your forecasts wrong and, therefore, make your plan wrong.

Q. And as a practical matter, are there any studies that should be done at the management unit level in terms of what you have identified on the yield curves as 1, 2 and 3, or is this strictly a theoretical provincial-wide examination that you are depicting here?

A. That one is really difficult because I think that an issue like this I would feel more comfortable if there was some kind of provincial consistency - this is going to sound like a contradiction to what I said earlier - but a provincial consistency in the approach to developing yield curves, but recognizing that in a particular unit the -- particularly these kinds of things where you encounter stand breakup, that those are going to be quite unique and -- actually those are handled now in the present system. The way the yield curves enter in the model, it actually puts them down.

I think in the audit there's an example of yield curves extracted from the computer program as it run the OWOSFOP, and it actually has these declines in them. So they can be handled imperically if you have current data.

It requires a combination of local and provincial level analysis and I think in this case you want some consistency, some consistency of the kinds of models used to make those yield curves.

Q. You should have a Royal Commission into yield curves.

A. No, there is some exciting work going on in this province in yield curves. I feel more and more comfortable. There was a meeting at Thunder Bay just three weeks ago -- Thunder Bay, North Bay, on this particular issue, two days on how to build yield curves and the evidence suggests that there is some really neat things being done.

MS. SEABORN: Thank you, Dr. Baskerville.

Those are all my questions, Mr. Chairman.

THE CHAIRMAN: Thank you, Ms. Seaborn.

Well, ladies and gentlemen, I think we will adjourn at this point until 1:00 p.m. at which time -- sorry, 1:30, at which time we will commence with the Ministry's cross-examination.

And you will be most of the afternoon, Mr. Freidin?

MR. FREIDIN: I can't promise to finish this afternoon, but I will try.

THE CHAIRMAN: Very well. And we will be back tomorrow for Mr. Turkstra's completion of this evidence.

Thank you.

---Luncheon recess taken at 12:15 p.m.

---On resuming at 1:35 p.m.

THE CHAIRMAN: Thank you. Be seated, please. We thank whoever has brightened up our day.

MR. HANNA: They're sitting close to you, Mr. Chairman.

THE CHAIRMAN: Ladies and gentlemen, before I forget - and I've mentioned this to Mr. Turkstra - that I would like to put on the record that, as you're aware, we called Dean Baskerville as our witness. Since his attendance of course we have not had anything to say to Dean Baskerville other than good morning and seeing him as we enter and leave.

It's our intention that before he departs for New Brunswick, probably some time tomorrow, or whatever, that we might be so bold as to have a cup of coffee with him on a strictly social basis. We give you our undertaking that we will not be discussing any aspect of the case with him, and Mr. Turkstra will likely be present, and you can hold us to that, Mr. Turkstra.

We just wanted it clearly on the record so that if anyone sees Dean Baskerville coming forth from the inner sanctum they aren't in any way suspicious of what might otherwise be going on.

I'm sure the parties would not object to us doing that. We do feel that Dean Baskerville has given all of us the benefit of his time, has travelled a good distance to be here and that it would be entirely appropriate for the Board to talk to him for a couple of minutes about the weather in New Brunswick as opposed to anything else.

If you would have any objections, now is the time.

(no response)

Mr. Freidin?

MR. FREIDIN: Yes.

CROSS-EXAMINATION BY MR. FREIDIN:

Q. Dean Baskerville, a number of places in your witness statement you used the phrase 'managed state', particularly when you refer to it in paragraphs 21 and 22.

Could you just explain what you mean by that phrase?

A. In area regulation the managed state would be the situation where there was an equal area in

each class from one year's old to the age of rotation, but in general it means having achieved the state of a forest from which you can now with its consistent set of tools get a consistent set of benefits.

Q. So if somebody thought it meant a forest where everything was planted by man, that would be an improper assumption?

A. Most certainly.

Q. And while we are just speaking of planting, if in a forest the forester believes that they can harvest a particular area, leave it completely for natural regeneration, knowing the site and silviculture can accept what is going to come back on that site because accepting what comes back on that site is consistent with the timber management objectives for the forest as a whole; would you characterize that decision as an acceptable timber management decision?

A. As described, the answer is yes. If you go back to the concept of a harvest queue and a silviculture queue - a harvest schedule I guess I called it - the idea is to harvest stands and to provide silvicultural treatment, one of which is no treatment, which ensures that the harvest schedule remains its integrity over time so that there are

always available stands of the appropriate characteristics to harvest.

So that what's at issue here is the time of availability of a stand and its determination of treatment would be on when it's going to be needed in the harvest queue. So that it's very common and perfectly reasonable, in fact intellegent management because it saves money, not to treat all stands because some of them will, in fact, produce the materials you want at the time you want without treatment.

Q. Thank you. I would like to ask you some questions about your evidence regarding objectives and involvement of the public in the setting of objectives, and by way of general introduction, I take it that you are aware that objectives and goals are set at various levels within the Ministry of Natural Resources at the provincial level, at the regional level, district level and that sort of thing?

A. Yes.

Q. And an example of a target, if you will, that could be set at the provincial level would be the population of moose that the province would like to have overall. Would that be an example of a provincially set objective?

A. Certainly it could be. It strikes me

as one that would be just a bit awkward to measure and assess.

Q. All right. And we get back into the question of measuring them at the local level where you actually using the levers of control, that is where you would want to assess how you were moving towards that objective?

A. Yes. In general, it would be safer to set objectives in the context of the ability to control resource dynamics to achieve those objectives.

That doesn't mean you can't set a provincial objective and disaggregate a solution downwards through the various levels of the bureaucracy, but the key is to keep a consistency between the objective and the ability to deliver the objective via the actions taken.

Q. Okay. And can we agree that the activities on any particular forest management unit or a wildlife management unit could affect the achievement of that larger objective?

A. I would go further, that the opportunity to reach an objective at some higher level will be conditioned by the degree to which activities at a unit level, where the actual design and implementation take place, are consistent with that

higher objective.

Q. And would it, therefore, be reasonable to expect, Dean Baskerville, that the local objective would not be developed with complete disregard of the broader objective.

And if I could perhaps use an example, and perhaps it's an example in the extreme, but just to make the point, that you wouldn't want to have a provincial objective for wilderness on the one hand and to provide industry with continuous and predictable wood on the other, try to achieve that through your management but allow a particular management unit to make the decision on its own that: No, we are not going to have any wilderness here, it's going to be timber management only or vice versa?

You couldn't have the setting of objectives at the local level which would fly in the face of a provincial objective in that manner?

A. I don't want to be pickey, but you could have but it wouldn't be consistent, and is that the question really, would it be consistent to do that? Because if you went back to the moose example, you could set a moose target for the whole province; then to deliver it, the actions at each unit have to be such that you can achieve it. It doesn't mean the actions

have to be the same in each unit.

Q. Right.

A. You could have, as the question was asked, you could have moose in northwestern Ontario but not in northeastern Ontario in an extreme situation, but there will be some average -- some geographic pattern to the availability of moose. Is that -- did I...?

Q. I think that's part of it, but where you have got this provincial objective and you want to achieve it through the activity on all of these management units, would you agree that it would be unreasonable to give to any one management unit the level of autonomy that would allow it to in fact say: No, we think on this unit what we want is wildnerness not timber management, or in another unit they would have the autonomy to say: No, we don't want timber management here, we want wildnerness.

I'm suggesting that that would be unreasonable.

A. If not unreasonable certainly dangerous. It comes back to this issue of whether or not there is a vertical nesting in both directions, upwards of the capabilities of the forest that determines the provincial-wide objective and downwards

the actions that deliver the province-wide objective, and there has to be that -- they don't have to be even and the same in all of the management units, but the output, the net effect must deliver what is sought.

So that you can't have consistency at the provincial level unless there is some structured performance standard at the unit level to ensure that you stay -- you deliver your part of the provincial objective.

Q. Now, during the discussion of objective setting there was again a discussion of the public involvement in that, and I was somewhat confused regarding the level at which the objectives were being set when you were having that discussion and who the public was.

And if I might I would like to provide you with a copy of an article which really gave rise to my confusion. It's an article which you authored and presented in October of 1987 entitled: Management of Publicly Owned Forests, and I think it was presented at the Consolidated Bathurst lecture?

A. Mm-hmm.

MR. FREIDIN: If I might, Mr. Chairman, I would like to mark that as the next exhibit.

Q. Dr. Baskerville, do you have a copy

of that with you?

A. I believe I do.

MR. GREENWOOD: (handed)

MR. TURKSTRA: Is that an exhibit already, Mr. Freidin?

MR. FREIDIN: No.

THE CHAIRMAN: That will be Exhibit 980.

MR. TURKSTRA: It's already 425, Mr. Chairman.

MS. SWENARCHUK: Yes, it is.

MR. FREIDIN: No, no.

THE WITNESS: Mr. Freidin, I don't seem to have it, at least I can't lay hands on it.

MR. TURKSTRA: It is.

MR. FREIDIN: It is?

MR. GREENWOOD: Just printed differently than the Forestry Chronicle from the look of it.

THE CHAIRMAN: So this is already Exhibit 425; is that correct?

MR. FREIDIN: Well, does the Board have a copy of that.

You have been given the article because the page numbers may be different and I have to operate off my page numbers.

MR. FREIDIN: Q. Now, if we might, Dr.

Baskerville, I would like you to turn to page 9 where we have the heading: Public Participation in Management Design. Do you have that?

A. Yes.

Q. I would like you to just take a moment and read the first three pararaphs, because my questioning is going to arise from the concepts contained therein.

Tell me when you are finished.

A. Yes.

Q. Firstly, you refer to public participation in management design. Now, when you use the phrase public in that context, are you talking about the politicians, are you talking about civil servants, are you talking about interest groups, and if you are talking about interest groups, are you talking about provincial ones, local ones.

It's a very general sort of phrasing and I'm just wondering whether you have a specific meaning?

A. I think in the context of that particular paper it was very broadly defined.

So it would be interest groups and the public at large.

Q. And could you explain what you meant in the last sentence of the third paragraph where you

state that:

"The design of forest management to reach specified goals is primarily a technical matter with little room for public negotiation."

A. In the end, Mr. Chairman, there will be, for a management unit say, a target for availability of particular kinds of moose habitat, as we discussed earlier, for availability of sawlogs, for availability of pulp and so on.

Once that target is determined by whatever means, the combination of mixes, the design of the harvest schedule and the silviculture schedule which will, when implemented over time, deliver the availability desired is a technical matter, it has to do with cause/effect understanding of the tools of management and of the responses of the stand to the application of those tools.

And I think that that was the issue that we were looking at with the sensitivity diagram earlier this morning.

Q. Now, this morning the Chairman asked you a question about public involvement and you answered - and I think it was in the context in a discussion about a trapper - that you would distinguish

between design of management and input to understanding. Do you recall making that distinction?

A. Yes, mm-hmm.

Q. Could you just sort of expand on that distinction, please?

A. There are actually three levels, if I could. One is a desire of one of the public owners for what the benefits should be, and that at the other extreme is the technical design of how you would deliver those benefits, and I think that the answer that I gave you this morning was to suggest that comprehension of the system didn't reside solely in the hands of those who had a Bachelor of Science in forestry, that there were people who had anecdotal evidence of how the system operated, which put in context -- some broader context could be helpful, and that I would consider it wise to avail yourself of such information where it exists.

Q. Thank you. Just a very few questions on the subject matter of optimization, if I might. I don't believe you have to refer to the audit, but you do refer to it at page 72 and Mr. Hanna asked you a considerable number of questions about this subject.

Now, do I understand your evidence correctly, Dean Baskerville, to be that your audit did

not recommend the use of formal optimization models by the Ministry of Natural Resources?

A. Oh, I most certainly did not recommend it, in fact given our current state of knowledge of the elements of the system and the trade-offs that we are trying to make, you couldn't in fact apply it.

I don't believe at this point that it is possible to write the algorithm that would trade off moose population with timber population, particularly at this stage of our evolution in learning how to manage renewable resources, we need to expose as much as possible our techniques of forecasting to challenge and optimization has a tendency to cover those, it gives you one answer rather than an array of answers we lose site of the richness. An optimization routine might examine easily a hundred thousand possible ways to solve a management problem, but it only gives you one to look at.

I think I argued earlier that I would prefer if perhaps a half a dozen of those options were displayed to the chooser so that the chooser understood both the objective and the means for reaching that objective and that, in implementing, you keep those two things close together so that we learn as quickly as

possible.

By reference to optimization, they were to what I believe was a misuse of the word and certainly not to suggest that at this stage it be applied.

THE CHAIRMAN: Excuse me. Dean Baskerville, if as I understand it to get to a position of being able to utilize optimization in its formal sense it would obviously involve the use of computers to be able to make those number of choice runs?

THE WITNESS: Mm-hmm.

THE CHAIRMAN: Of almost infinite number.

THE WITNESS: Mm-hmm.

THE CHAIRMAN: At the end of which supposedly comes out the one right decision in those circumstances. When you are portraying these to the public or to anybody who is reviewing the management system, is it necessary for those people to have an understanding of (a) how computers work and what kind of computer model has been used, and all of the vagaries of the particular model being used, or can the results be portrayed in simple enough language so that the average person off the street without that kind of background or training can understand it?

THE WITNESS: From my experience, Mr.

Chairman, an optimization model is opaque to the user. Few people of my acquaintance comprehend sufficiently well to be able to understand all of the mechanics of what is going on in there, and certainly if you want to influence a decision group, a decision person, it is a much more useful approach if you use a thoroughly transparent model like the one that I showed you the first day with the age-class structure, the harvest schedules and the silviculture schedules all visible and when you operate it those things are seen to function, and you can actually track by five-year step in the forecast you can see how hectares of forest are harvested from one yield curve and regenerated to either no treatment or to some treatment and how that all adds up over time.

The only success I have ever had with optimization - and I tried in the mid-70s to use it because I thought it was the answer, and I moved away to more transparent models which allowed the user to learn - but the only time I have seen it really useful was to find, as I spoke of earlier, the solutions of various goodness and what you wanted was the part of the total solution set where there was -- they were close to optimal but you could explore with it.

And a student of mine did an analysis of

economics of wood supply to a particular sawmill from a particular area of land and offered in fact six optimal solutions based on slightly different trade-offs in terms of willingness to pay for silviculture and desire for how much wood you would want and the result was from, looking at that, that the person that it was presented to said: Isn't that neat that I can see more than one option, pick one of them and said: Now, find out how I can actually implement that.

But we move right back to having to have a transparent model that he could see that he, the decision-maker or makers, could see how we were planning so this set of actions led to that set of outcomes. There needs to be a continuity of belief through the way you mimic the dynamics of the forest.

Did I get the -- does that cover the question?

MR. FREIDIN: That covers the Chairman's question, yes. It does more than cover mine.

Q. So, as I understand it then, the comments regarding optimization in your audit were motivated by your concern that optimization has a very specific meaning, as you have just explained, and that someone might be misled if they believed that the Ministry meant that they used optimization; in that

sense when they, the Ministry, said that they managed for optimized or optimal results, it was a definition problem?

A. Yes, at least a definition problem in that optimum truly means best. It's easier perhaps to show it in a diagram.

If we had two things, level of treatment, and this was the response (indicating), if you can -- and if we had two things responding like that, the maximum for this one is here and the maximum for that one is there. (indicating) The optimum for the two of them will obviously lie someplace inbetween.

And it will depend on whether or not -- if they are of equal value, it lies right there (indicating), but if they are of unequal value it lies closer to this one, if this is the more valued one, closer to this one if this is the more valued one. (indicating)

The concern that I had was that to create a belief that in fact the best there was some attempt to approximate the best mix of things in any repeatable manner I thought was dangerous, because there was no evidence that such a systemic attempt to make a repeatable approximation of what was best existed.

Q. I want to move on and ask you some

questions regarding guidelines, and the discussion which took place in relation to them I think used the phrase moose hotels.

A. Motels actually I think was the phrase.

Q. Motels, okay.

THE CHAIRMAN: They drive. You want to park in front, Mr. Freidin.

Q. Now, during the cross-examination by Mr. Cosman he referred to the moose guidelines and I think he was the one that raised this whole subject of moose motels and he asked you whether your position on the constraint approach is that constraints are created without any real knowledge of benefit for moose.

And during your answer you indicated that you can't be certain that the constraints were achieving the intended purpose. And do I understand your evidence correctly so far?

A. That's correct.

Q. Now, did I understand your other evidence regarding guidelines to include the concept of or the statement that if the guidelines are prepared in accordance with the best science available that it's a good place to start in terms of management and their use is reasonable while MNR moves in the direction of

researching and developing more sophisticated tools and analytical approaches to management.

A. That is, I would say, a very fair interpretation of what my point was, that the issue is not whether or not guidelines are useful, they are as a place to start, the issue really, in my mind, is how quickly we improve them to an understanding of system dynamics.

Q. Now, you also indicated to Mr. Cosman that you did not think that it was appropriate for a decision made by a unit forester in conjunction with the planning team be reversed, as he put it, by a bureaucrat one level up as a cookbook. Do you recall him asking you a question along those lines?

A. Yes.

Q. And you said, or you gave an example in response of a situation where a regional person seemed to have dictated as a result of the silvicultural guide that some specific rotation be followed.

And you also said, in relation to this sort of situation - I think I have you quoted correctly - that in the cases that you reviewed in 1986 it was rare that it was a difference with professional judgment that lead to the region's disagreement made

with the decision made by the district staff. Do I understand your evidence correctly?

A. Yes.

Q. Dr. Baskerville, if the difference of opinion was based on an informed professional basis; in other words, there was a difference in terms of professional judgment, would that be a different situation?

A. I think it is a different situation in that there certainly exists the opportunity where, when you use the unit forester as the entry level and where the person who is reviewing the work, the proposal of this entry level person has actually worked on that same unit in the past and if his experience is recent, that you could get a difference of professional opinion where in fact the senior person could be correct.

The problems that I saw that I found awkward were things like the notion of harvesting oldest first, and the interpretation at the regional level was that the oldest stands should be harvested first irrespective of the fact that the stands on good sites were breaking up while they were harvesting older stands on poor sites.

And it seemed contradictory in every

sense that you would not move and harvest the oldest on each site and particularly to rejuvenite the stands on the best sites as quickly as possible.

That is an example of an override that had to do with blindly applying a rule, in fact applying a rule which I would suggest wasn't even very well understood as opposed to a professional difference.

Q. Now, I believe that during your evidence you indicated that protection of the more sensitive wildlife habitat through the creation of reserves, for example areas where there were no timber management operations, is not enough if you are talking about wildlife management, that in fact you couldn't just do that and ignore wildlife habitat outside those sensitive areas; is that correct?

It seems to make sense to me.

A. In my opinion, that you cannot by simply removing reserves ensure that you are going to protect yourself against the fact that nature is changing.

Q. Am I correct that what you would want to see in those other areas - these are now the areas outside the sensitive areas where reserves get set as you have described them - what you would want to see

there is the biologist or the wildlife people addressing their minds to the spacial and temporal pattern of the forest which would benefit wildlife and you would like to see them doing that in consultation with the foresters who had control over the harvest and the silvicultural schedules?

A. The presumption in all of this is that it is the harvest schedule and the silviculture schedule that creates the pattern and that pattern is influencing populations, so yes, one of the first orders on the agenda should be to discover reactions of the population to pattern, because all of our identification of areas of concern or of guidelines depends upon that free assumption.

Q. And you had an opportunity to review, I believe briefly, the moose habitat guidelines as they existed in 1986. And, first of all, to go back, when you are in this area and you are trying to consider the spacial and temporal pattern of the forest that you want for wildlife and you go after creating that, is that often referred to as range management?

A. It's certainly analagous. Range management is a term that tended to come more from the grasslands end of the spectrum, but the principles are the same. You manage range for cattle, for elk and I

suppose if you extend it, for moose. But from that range you are -- from that starting at one end of the scale for cattle to coming to the moose end, you are moving from essentially open range to range underneath trees.

Q. Okay. Can you confirm for me, Dr. Baskerville, that the moose guidelines that you did look at in 1986 addressed range management?

A. Spoke of range management in the sense that they recognized the need for it, but did not address range management in the context that, say for instance, one of the major treatices on this is a publication by a man named Gross in Colorado who looked at the management of range for cattle and for elk I guess it was, simultaneously but where there is an attempt to actually regulate the availability of habitat in order along with hunting control and control of the number of cows to control the populations.

It stops short of dealing with the populations, that would be the distinction.

Q. All right. Accepting for the purposes of my question that distinction, Dr. Baskerville, would you agree then -- I understand that the moose guidelines then did address it with that one comment that you have made, would you agree that the

moose guidelines contemplate that there will be a succession of habitats both spacially and temporally across the forest notwithstanding the point that you have just made?

A. I think that's correct, in my recollection, that they certainly recognized that the forest is changing but my reservation isn't a minor one. The key here is that it's the population that we really want to regulate over time and that there was no assessment of the population itself.

Q. You didn't see any evidence of that assessment?

A. No, I didn't. That is a more precise way to say it.

Q. Now, a matter of clarification while we are talking about reserves. Dr. Baskerville, let me just describe a situation to you.

If you establish a reserve and by a reserve I mean an area where there will be no timber management operations, and you do that to protect wildlife, in what circumstances would the establishment of that reserve be a constraint and in what circumstances would it not be a constraint?

We have spoken about this all over the place, a number of different places. I wonder whether

you can help me with that one.

A. If you remove an area from the timber management base I suppose you could call that a constraint, but actually what you have simply done is said that the timber management base, instead of being a hundred thousand hectares is now 90,000 and that 10,000 of it has been taken out.

So if in fact taking that piece out doesn't in any way constrain what is done on the remaining part of it, I would not call that a constraint; that is simply a removal from the land base.

Q. I am sorry, what was the last comment?

A. That if you simply take the area out of production and don't associate with that removal any further conditions on how timber is managed on the remaining part, that would not be a constraint, it would simply be a reduction of the land base. You could call it a constraint to the land base.

Q. All right. So let me understand. If you set up a reserve for wildlife purposes and go on and practice sound timber management in the rest of the area and that area which is the reserve is forever lost to timber management, you wouldn't call that a

constraint, that is a withdrawal of the area from the land base?

A. That's separation of the land base into two alternative uses and presumably managed differently with different objectives, yes.

Q. Now, that would be the case --

THE CHAIRMAN: If you set up the same kind of constraint with respect to timber activities; in other words, you wanted to preserve a particular area with no harvesting for, say, a natural seed source, would that be a constraint to the timber management plan?

THE WITNESS: That example would be, or to say that the area wasn't withdrawn from the timber management land base, but that the timber management actions on the land base were constrainted to certain limits, these are the sorts of things you can do. That would be the distinction I would draw.

MR. FREIDIN: Q. And the latter where you in fact had some restrictions on what you in fact could do, a modified harvest cut in a certain area, that would be a constraint?

A. Yes, a constraint to timber management.

Q. Now, could you just turn to paragraph

8 of your witness statement, Dr. Baskerville. Do you have that?

A. Yes, I do.

Q. Now, you are talking here about integration and I'm interested in a sentence which starts down about 10 lines, right in the middle of the paragraph it says: "To limit these changes..." It says:

> "To limit these changes to the presumed benefit of non-timber uses, actions are taken which constrain timber production (e.g. requiring a defined buffer strip along all streams) is generally accepted as good for wildlife or fish but there is no quantitative relationship..." et cetera.

Now, when you used the term 'defined buffer' --

THE CHAIRMAN: Sorry, what page was that, Mr. Freidin?

MR. FREIDIN: It's page 8 of his witness statement.

THE WITNESS: Page 4.

MR. FREIDIN: Page 4, I am sorry. If I said page 8 I apologize. It's right in the middle.

Q. You use the term 'defined buffer', and really when you use the word 'defined buffer', were you talking about a buffer the size of which was predetermined, or are you talking about a buffer which after consideration and discussion the limits of which were defined?

A. The context that I had in mind was a rule that says there will be a 10-metre buffer on the side of a stream, draw it and honour it.

Q. So if you had a situation where you had a guideline that said we would recommend or provide direction that in these circumstances this might be appropriate, but if you through discussion with the appropriate resource managers determined that a different buffer, a buffer of a different definition in terms of its size and location was appropriate, that that would not be a constraint or imposed through constraint?

A. No, it's still a constraint because you are simply negotiating the change of the constraint on timber rather than seeking to find the action that leads to favour the population that you are trying to build.

And the distinction here is in whether your approach to handling, for instance, moose is to

limit what timber does, or to either control what timber does in order to create the moose habitat. They are different philosophies.

Q. I think I understand the differences. I thank you for the clarification, but before we leave that matter, could you turn to paragraph --

THE CHAIRMAN: Just one second. Is what you are saying, Dr. Baskerville, in every case to apply the constraint philosophy it has to be applied with the resource which you are trying to manage and with which the activities are associated have to be the same resource?

THE WITNESS: The difficulty is that, to use the example, if you are -- if the moose population is the thing of concern and the approach is to look at it only from the point of view of constraining timber, it again takes the managers eye off the real goal which is to manage moose population, and what we need rather than to be constraining timber is to be using the activities of timber management in order that the temporal/spacial pattern that we create in the forest does suit moose.

MR. FREIDIN: Q. Could we just move to paragraph 26. Paragraph 26 of the witness statement you will find that on page 12.

Now, I would like to direct your attention to the second last sentence of the paragraph, it starts up about six lines right at the right-hand side:

"By focussing on timber management plans rather than developing multi-objective forest management plans, MNR will continue to apply constraints to timber management that favour habitat and recreation."

Could you explain what you meant by this constrained approach favoring habitat and recreation?

A. The principle here is that it's timber that is being managed, that the principal objective is set in terms of some goal with respect to, in this case, area regulation with respect to the goal structure of the forest and usually the volume production from it, but specifically the goal structure of the forest.

And that the constraint is applied to say to reaching that goal or -- yes, in reaching that goal the various steps taken are constrained to favour in the sense that it is believed that that action in this place would be deleterious to habitat or recreation and, therefore, you proscribe it, you limit the action

in that area, which to me is favoring habitat and recreation locally.

Q. When you use --

A. That is not a very good choice of words, I will concede.

Q. When you use the word favour in that context, would I be incorrect to imply into the use of that word that you are suggesting that by favoring habitat and recreation that you are likely to in fact be conservative in terms of the protection that you impose to protect those values?

That is how I interpret it. I want to know whether that is an appropriate interpreation or not?

A. I understand. That really isn't what I meant, but it is open to that interpretation. No, I really thought -- meant to say that there is an attempt, although it's not measurable and it's not designed in a way that you could tell whether you really had improved habitat or recreation, the intent of placing those is to do that.

The issue is whether or not you can tell if you achieved it, which I would say we -- the placing of a constraint has a tendency, particularly in a bureaucratic system, to alleviate whoever did it from

further worry because you have met the constraint.

Q. And one last question I suppose, I think in relation to constraints. Is it true to say that you could get the same prescription on a particular piece of ground through constraint management as you would through non-constraint management, keeping in mind I know all the differences between the two, but is it possible that you could in fact end up with exactly the same prescription?

A. Yes, it's possible. The differences would be that in one case you would have done it with the intent to create something and would have a target that you aimed at and, in the other, you would have done it to prevent an action and with no target associated with it to detect.

Q. Okay, thank you. I would like to ask you a few questions about the role of regional review either in timber management plans or perhaps just the role of regional people in resource management generally.

As I understand your evidence regarding wildlife, the spacial and temporal pattern of the forest is all important?

A. Certainly I intended to say that and certainly the presumption of saying that you must

intervene in the way the harvest schedule and the timber -- or silviculture schedule are implemented in order to maintain wildlife, implies that most anybody who approachs this feels -- believes that, yes.

Q. Now, within any particular forest, any particular let's say forest management unit, as I understand it you just can't look at one cut and say whether it is good or bad for wildlife, it really has to be assessed in the context of what's around it, what the spacial and temporal pattern is around it and what you projected it will be over time?

A. Overwhelmingly that's exactly the point. And out of context one stand -- the stands in a forest don't add up to the total, whether it is for wildlife seeking habitat or when we were out looking for sawlogs, the pattern is important.

Q. Right. Having regard to wildlife principles, would it be fair to say that a wildlife manager would -- might want to know not only the spacial and temporal pattern within the particular unit that he or she was responsible for, but that there would be circumstances in which it wuld be extremely useful to know what the temporal and spacial pattern of the forest outside that unit was?

A. Can I conceive of such a case?

Q. Yes.

A. Yes, I think you can. The divisions that we make, we as a human society make of natural systems are by and large arbitrary. We define a management unit as something that's administratively comfortable given the scale of effort that we can bring to bear.

So that at the border of a management unit there will be almost, I suppose with a probability of one for any size of unit that we are looking at here, a stand that has the border -- the management unit broader go right through it, so half the stand is in one management unit and half is in the other.

There is no reason to believe that the same thing doesn't happen to a population of animals, that the population of animals locally that moves near the edge of one of those management units, its home range could be on both sides of the border. So I think that's your question and the answer would have to be: Yes, that could occur.

Q. So what I am really suggesting to you, Dr. Baskerville -- what I would like to suggest to you is that if you have an informed professional person at the region or at a level above the unit itself who has an idea of the bigger picture, not only what the

habitat is in that one unit but in the adjacent units, all right, and I am assuming this person is a professional person who knows what they are talking about, that that would be a useful thing to have in terms of meeting your wildlife objectives?

A. Given the current state-of-the-art, if you have someone with skills at that level, I think that would be reasonable, but I would not have much faith that if you aggregated above a management unit which is already hundreds of thousands of hectares that one person would have any reasonable understanding of population reactions to changes in the forest pattern at that scale.

I think that it's -- certainly in balancing objectives from one to the other, I believe it would be a potent trader, but in terms of determining actions, it's inconceivable to me that he could grasp the cause/effect connections at that scale.

Q. All right. But leaving aside the degree to which the cause/effect relationships might be known, hypothetically for instance let's assume that everything is fine in one forest management unit or wildlife management unit but there are a number of them in the region and the spacial and temporal pattern of an adjacent unit changes substantially as a result of a

fire.

Firstly, would you agree that the temporal and spacial pattern for wildlife in the two units now would be considerably different than it was prior to the fire?

A. Yes. And if the concern to manage the habitat was coherent you might in fact change the management plan of both units in order to adjust for that. But I would see that being done at the unit level still, but perhaps overseeing the direction that it needed to happen from above.

Q. Thank you. Now, you are talking about population of wildlife, in the hypothetical we were talking about. Would the same be true of a population of trees?

In other words, we've heard about wood supply, and let's assume that you have a management unit that has historically been supplying a certain number of mills. You have indicated that the foresters in many units now are managing a very large area and you have made comments about whether such areas should increase or not.

Would you agree that for the purpose of determining where shortages of wood might occur -- in fact, let's say that the unit forester knows what he is

doing and he says: I am going to have a shortage of wood - I shouldn't assume, they do know - but they might not know whether there is a supply in the next unit or in some unit which is within an economical distance in terms of transporting wood.

In that situation, Dr. Baskerville, I'd suggest to you that there is a useful role to be played by people in the district or in the region, informed people who could have knowledge of that picture on a larger area than just a forest management unit. There is in fact a very important role for those regional people to play?

A. The production possibilities from each unit, if they were determined and you aggregated upwards, then in fact you would identify when there was an inability of the production possibilities from a unit to meet the mills dependent upon it and would in fact engage in such a trading.

That's a very different situation than imagining that from that level, without the benefit of those production possibilities, it is possible to look down and trade.

Q. Let's assume that you have got those production possibilities, would you agree that it would be useful for someone to be at the higher level at

either the district or the region to in fact do the looking down to be able to have that kind of input?

A. As you have described it, that person would be in what I would call an active position of looking -- managing production on a larger area as opposed to verifying that a particular set of rules had been followed on each of the units.

Q. And that would be a useful role to be fulfilled by someone at the regional level?

A. To achieve the best all-round benefits in terms of timber production from a unit, from a large area, that's an appropriate way to do it because you would need to know -- let's say that the initial definition of the units didn't recognize age-class structure adequately, it might very well be possible that the sustainable harvest from one unit is very low and from another very high simply because at some point in say the next 40 years one of them faces a problem of age-class structure, that means the evenflow harvest would be very low.

Well, the simplest thing to do would be to recognize that and trade wood until you'd passed that period of time.

THE CHAIRMAN: But aren't you presuming that if the person at the higher level is, as you

indicated, in active management, that that person would also have the ability to control the actions on the ground?

THE WITNESS: No, he would have to -- the people controlling the actions on the ground, I would argue, need to be the local person, but if the production possibilities are undersold here and oversold here, (indicating) someone who can see both of those situations - and I think this was the question Mr. Freidin was asking - could direct wood to move from one to the other as opposed to redefining boundaries.

MR. FREIDIN: Q. For instance, if I can give you a hypothetical - and I was going to get into this question of surplus later, but I think it is apropos of the present discussion - if you had a surplus on a particular unit, the forester in that unit may say: Well, I have got a surplus and I think I can in fact -- the company doesn't need it, I think I should dispose of that or make it available to other people and that might be a very reasonable decision to make within the context of that forest management unit.

Let's say we were talking about a species - let's say it was black spruce - somebody at the region who had a picture of the wood supply problems in the adjacent units or in other units in the

region might say: Well, that might be good in terms of licensing it there, but we have got a potential wood supply problem in black spruce on the adjacent unit. I think it makes more sense, Mr. Forester, that you don't licence that to somebody else, that you retain that on the stump because down the road we think we can use that to meet the supply problem of the next unit.

Now, that's a situation in my view where the regional person would have that bigger picture and that the input and the decision that I have just described to you would be a reasonable one. Now, could you agree with that?

A. Yes, I can agree with that, the way it has been stated, which was all in terms of volume. In fact, what would be known in the current -- in the structure I looked at at least in '86 would be the area that was available for harvest and not the amount of wood that was available to trade, but the principle is the same.

Q. All right. So if the principles are the same, if we introduced into that hypothetical that there was a knowledge of the volume or a calculation of the volume, then you would have no objection with the hypothetical that I suggested to you?

A. No.

Q. Is that correct?

A. That's reasonable.

Q. Thank you. I want to put to you six or seven propositions. I am not too sure whether we can go through these, Dr. Baskerville, with a yes or a no. And I don't want you obviously - and I know you won't - answer yes or no if you don't feel it is appropriate, but let's try.

Would you agree that in providing direction to the field, whether it is to a forester or to a biologist, that you would want it to be based on the best science and experience available?

A. Well, obviously yes.

Q. Okay. Can I go on to the next one?

THE CHAIRMAN: You are not going to get off that easily, Mr. Freidin.

MR. FREIDIN: Well, I will try.

THE WITNESS: The concept of providing direction to the field presumes that there is greater knowledge somewhere other than at the field level about the system, and I think we could find a hypothetical where that was true, so I won't argue.

MR. FREIDIN: Q. And by direction I am certainly not suggesting a rulebook, I am suggesting just general guidance which the professional would have

to assess and make a professional judgment based on that general direction.

A. Yes.

Q. Secondly, that you would want to keep that sort of direction and information as current or up to date as possible?

A. Yes.

Q. That if you were concerned with the possible effects of timber management activities on wildlife, the better one understands the cause/effect relationships between timber management activities and wildlife the better?

A. Yes, and particularly so in the context of the unit where there is a person who is controlling the actions, the harvest schedule and the silviculture schedule which are the key determinants of future availability of habitat.

Q. Right. And this goes back to what we discussed a little bit earlier about it being a desirable thing for the forester and the biologist, or whoever is responsible for wildlife management, discussing the situation, the temporal and spacial pattern which is desirable for both of them?

A. I think there isn't -- I wouldn't quibble with this idea that we can distribute. For

instance, if it were a tool, an analytical tool, passing that downward I would say would be a wise thing to do as quickly as possible as opposed to passing downwards a decision for them.

In what you have said you haven't implied that it was not just something like: Here is a better way to do your analysis to discover what you are doing to moose habitat.

Q. No, I wasn't implying --

A. And that I would say is a reasonable thing to pass downwards, if you've got one.

Q. If you have got one.

A. Yes.

Q. And I wasn't implying, I don't think, in that particular comment the application of any particular tools.

I am saying that if you are concerned about the effects of timber management on wildlife - I mean the more tools you have perhaps the better - but regardless of the tools you have got the better, you understand the cause/effect relationships between the timber management activity on the one hand and on wildlife population the better you are?

A. Unequivocally yes.

Q. I am trying to make these very easy

for you to agree with, Dr. Baskerville.

Nextly, that examining or studying the assumed cause/effect relationships of various timber management activities on other resources such as wildlife is an essential ingredient of adaptive management?

A. Yes, an essential ingredient that is quite difficult in fact to carry out.

Q. Right. And would you agree, sir, that it is one of the most important elements or ingredients of adaptive management because it is in fact the heart of the feedback loop?

A. I would certainly agree that it is a crucial element in adaptive management, but I would extend it to say that it is the crucial element in any management because whatever way you approach this you make precisely those same presumptions and all that is at issue here is whether or not you expose them regularly to tests.

Presumptions are there no matter how you do it, by constraint, by management or by adaptive management.

Q. Now, Dean Baskerville, I am not going to refer you to the article I am referring to, but I have read an article where you referred to highly

interactive workshops which in fact was the sort of things which Holling had suggested.

And as I understand it, these are workshops where if you have a specific situation, for instance you wanted to know the cause/effect relationships or identify what the cause/effect relationships might be between timber and a particular resource, you want to gather together experts and managers and through this interactive workshop come up with perhaps a very good assessment as to the state of knowledge on those cause/effect relationships.

Is that the sort of workshop that Holling referred to and which you would advocate would be appropriate in the circumstances I have just described?

A. It sounds similar. Certainly the approach is used to make people think about the connectivity of the system, what actions in one area impact the other area.

The exercise that was carried out in Banff last week in which I took part in on Friday was just actually such a thing, where there was an examination of fishing and recreation in a lake as a result of a number of things, including timber harvesting in the surrounding area.

So that I would say the main output from

such an exercise is to examine the connections and the nature of those connections. I'm not sure so sure that it is to advance the state of the knowledge, maybe it does collectively on an average sense because it exposes doing that, it exposes all sides to a discussion, to some understanding from other sides, but it does more than advance the state of knowledge, it focuses on where the state of knowledge should be advanced.

Q. And I take it then from your answer, Dr. Baskerville, that you would in fact support or think that a workshop approach would be good if in fact what you were trying to determine was either the state of the present knowledge of cause/effect relationships which I think have been referred to in some cases as hypotheses of effects? Would it be a good approach to take in that case?

A. Choosing the right people, yes.

Q. Right.

A. A structure where people are obliged to acknowledge alternative positions or related positions as opposed to simply presenting their own is much more conducive to learning about natural resources.

Academics tend to have the wildlife

people, for instance, go to different conferences altogether than the timber people do, they go separately, and not surprisingly at each one they bitch about what the other fellow is doing as opposed to bringing them into a small group, smaller group into an environment where they are bound by virtue of focusing on one problem to see -- to look at the connection, to interconnections.

Q. And you use the term that these workshop can in fact result in focusing on certain areas of examination.

I take it, Dr. Baskerville, that you would also support such a workshop approach if one of the tasks that was identified was to identify not only the hypotheses of effect but also to identify the ones which were not well understood and the ones which were therefore most in need of study?

A. In my experience, one of the principal benefits of these exercises is to come out of it with each side to an issue where it is a multi-sided issue, have had it contributed to usually a model, their view and then you finish with what I would call a sensitivity analysis where you look to find out how much error in some of these parts could influence total outcome, so where are the parts of this system where we

are as a society susceptible to error.

And I have never been in such a session where the players did not have their focus changed as a result. I have gone into them where I was absolutely certain that I knew where the sensitivities were and come out the proverbially changed man on the bases that having seen that other perspective presented and connected I was unable to detect the sensitive to error.

Q. I take it, Dean Baskerville, that the answer to my question is yes, that you do believe that the approach, this workshop approach is in fact one that you would support if what you were trying to do was to in fact identify the hypotheses of effect which were most in need of study?

A. I'm sorry to have been so circuitous, the answer is yes.

Q. Thank you. Regarding hypotheses of effect, Mr. Hanna asked you some questions about an article, Exhibit 979, re cumulative impact assessment.

And I apologize my notes aren't very good on this particular subject and the part of your answer to a question - I think he asked about how you go about monitoring the effectiveness of guidelines - you said the crucial thing is that you get the right

relationship, not that you get them in right.

And am I correct in that context -- first of all, did I understand your evidence correctly?

A. I'm trying to recall the context. I remember the discussion but I'm having difficulty getting -- the recall mechanism isn't fuctioning properly.

Q. All right. Let me do the best I can from my notes and I don't -- I have difficulty interpreting Mr. Hanna at times, but let me tell you what I have here.

I think he referred to page 13 of the article and he asked you a question along the lines of how you would go about monitoring the effectiveness of the moose habitat guidelines, he made some comment about given that they have cause/effect relationships implicit within them. And your answer -- part of your answer was: The crucial thing is taht you get the right relationship, not that you get them in right.

Does that help you?

A. Yes, I recall it now. We get in trouble when we are making forecasts more frequently for things we leave out than for the things we put in incorrectly. And my point was that -- and the workshops that ESSA and others use frequently for this

format are aimed at this, to get in the relationships, the connections which are likely to lead to a reaction rather than to spend all the time trying to add another decimal point to one transfer co-effecient between nitrogen in one form to nitrogen in another form, the real issue: Do you got nitrogen in there. So that's what I meant.

Getting a picture of say the interaction of timber harvesting and its impact on pattern in a forest, between that and a moose population, getting the right relationship is I believe more important than spending a lot of time tuning one relationship, to add decimal points to it.

Q. In that context, could we substitute the phrase hypotheses of effect for the word relationship?

A. I would prefer that actually, yes.

Q. Thank you. Could you turn to paragraph 6 of your witness statement, please.

Mr. Chairman, this is the last question I have before I am going to suggest that we have our afternoon break.

This is paragraph 6. It starts at the bottom of page 2 and what I want to ask you about is on page 3. You indicated in the second line that:

"The approach..." and the approach you were referring to is adaptivity in management design,

"...will ensure rapid learning and a safe transition to a managed system."

I am wondering whether you could perhaps expand or explain what you mean by a safe transition to a managed system and what is it that in fact provides that element of safety?

A. The approach would be to characterize the system as accurately as you could in terms of getting the right relationships in, to look at the interventions like a harvest schedule and a silviculture schedule, implement them in the system over time to make a forecast and you would make that forecast at least as long as the slowest element that's involved. In a tree situation you want perhaps 100 year forecast because of the response of the whole forest would be of that scale, that you make that forecast in a manner that the first, say, five years of it are sufficiently explicit that you go out and you test the relationships to find out whether or not you have reason to believe that you can still make another forecast a hundred years ahead or 80 years or whether you need to adapt -- whether you need to alter them, adapt, if you will.

What you are looking for is rather than say: I have it right and I am going to go 80 years and find out if I was right, they say the idea of a safe transition is that each step, as soon as you can sense how the system itself, the forester trying to manage is performing, you re-evaluate and make another forecast to look forward looking all the time for problems.

Is that clear enough?

Q. Yes, thank you.

THE CHAIRMAN: What happens at the end of the 100 years? By that time you have looked forward say to 120 or 140 or 180 because you keep moving forward. At any point is there a cut off at which you can say you are now in a managed state, or is that all theoretical?

THE WITNESS: I am almost inclined to think of it as theoretical. If you did it and looked at it in a textbook fashion, you would say that when we got to a balanced even aged forest you were there with area regulation, when we got to whatever it was we would have it for moose population, but it strikes me that the objectives of society are also transient, that our appreciation of what we could get from a resource is changing dramatically and as the objectives change, then so will the way approach management.

So that I don't really believe that there is one natural form that if we could achieve it everybody would go home and you would be out of work, sir.

THE CHAIRMAN: Probably gladly.

MR. MARTEL: Do us a favour.

MR. FREIDIN: You won't be here a hundred years from now.

THE CHAIRMAN: That's a guarantee.

MR. FREIDIN: I think this might be a convenient time for a break, Mr. Chairman.

THE CHAIRMAN: Okay. 20 minutes. Thank you.

---Recess taken at 2:55 p.m.

---On resuming at 3:20 p.m.

THE CHAIRMAN: Thank you. Be seated, please.

MR. TURKSTRA: Mr. Chairman, Mr. Freidin very kindly volunteered that since he is unlikely to finish today -- we are unlikely to finish today we might stop a little early. And I had earlier today added up that in order to be back here this morning Dr. Baskerville had logged over about 6,000 air miles in the last couple of days.

So if the Board doesn't mind, Mr. Freidin

suggested that we might stop at 4:30.

THE CHAIRMAN: No, that's fine. We were just discussing it among ourselves. We are going to be back in any event tomorrow and we are going to finish in ample time tomorrow we suspect so there is no point pushing it to the limit today. That will be fine.

MR. FREIDIN: Q. I would like to ask you a few questions, Dr. Baskerville, about the topic of whether or not there should be a single plan with with timber and wildlife in it or whether you should have separate plans.

There has been a number of questions asked about that matter from the Chairman, from the Board, as well as others, and my notes indicate that the Chairman asked you:

> Would you start with wildlife and fisheries and then move to others, and your answer was: Aesthetics things are more difficult. I would start with one or two wildlife guilds.

And I take if from your answer, Dr. Baskerville, that you were saying that you would start just with wildlife, perhaps with one or two guilds and then move on in the incremental way you described earlier in your evidence, that in fact that's what you

are doing in New Brunswick.

So firstly, is my assumption correct that your recommendation would be that you start with wildlife, with one or would guilds and move in the incremental way that you indicate earlier?

A. Yes, I think that's what was intend there.

Q. Now, I understand that that in fact is what is being done in New Brunswick, it is wildlife that you are trying to incorporate into those plans?

A. Yes. The intent there is that there will evolve a single plan which will -- where the harvest schedule and silviculture schedule are presented in the context of both availability of timber for a set of mills that are related to an area and the availability of habitat in initially two or three species guilds. A guild being a group that requires similar habitat. Not my choice of words.

Q. And would one of the reasons that you would not recommend that fisheries be incorporated into the same plan be that the levers of control really are quite different when you are talking about management of fish?

If there are other reasons perhaps you can indicate as well, but I'm assuming that that would

be a primary reason?

A. It's interesting in that context. I guess one of the reasons that I said that the way I did is that in New Brunswick federal fisheries are an important issue because we have an anagralous fish, the salmon moving back and forth, so there is a real problem trying to get a federal/provincial agreement going there.

THE CHAIRMAN: Are the fisheries managed in New Brunswick similar to Ontario in that the enforcement is assigned to the province?

THE WITNESS: It is essentially assigned, although for the salmon, the federal agency reserves the right to still go and check and at the river mouth it takes over control, at the river mouth towards the sea.

I don't think in answer to your question that I would have left fisheries out as being an area where getting a response of population to the action is going to be difficult and you need some successes I think in resource management. We need to be able to fairly quickly come to grips with the idea that we can forecast what we want and go out and make that happen, and that didn't strike me as a place where that was going to be easy, and we do have a set of pretty

severe, pretty strong constraints, not severe, strong constraints that work, are in place there.

THE CHAIRMAN: Is another one of the reasons in fisheries because some of the problems effecting population are due to other than timber activity, such as acid rain and some of the other problems?

THE WITNESS: I left them out I guess in the answer without having done it consciously and I'm going to explain now why my sub-conscience operated that way.

It wasn't because it's an easy thing to omit, it's because it's a difficult thing to handle and the other impacts, like poaching and so on are major problems.

MR. MARTEL: Everybody is honest in Ontario.

THE WITNESS: I've noticed that.

MRS. KOVEN: Dr. Baskerville, do you see the protection of fisheries habitat as one place where reserves might be the appropriate response in terms of protecting water quality from the effects of harvesting?

THE WITNESS: Yes, although even there it is not really simple. A reserve that's left along a

stream bank and then gradually breaks up and falls into the stream bank can in fact cause a problem by providing organic loading to a small stream.

So that there is an argument by some fisheries people that what they want is stability of the riparian vegetation more than just leave it and let it fall down.

Does that answer your question?

MRS. KOVEN: Is there stability for that sort of an environment if you harvest close to the stream's edge?

THE WITNESS: Harvest not by clearcutting but by other means or very small clearcuts, like the order of the size of this room perhaps. You would need to alter your strategy in that area. It would have to be quite different than it would be in a timber area.

THE CHAIRMAN: It would more in the form of maintenance, wouldn't it at some point?

THE WITNESS: Yes, that's --

THE CHAIRMAN: Even though it might involve taking away some wood that's merchantable as well?

THE WITNESS: Yes.

MR. FREIDIN: Q. Would you agree, Dr. Baskerville, that you really couldn't generalize, but

you would to really look at every case based on the slope, the kind of trees, the kind of soil and all that sort of thing?

A. Oh yes.

Q. Thank you. Some questions about boundaries for wildlife management units and forest management units. I understand that in New Brunswick that the boundaries for wildlife management units and forest management units are different; is that correct?

A. I think that that's a correct statement. At the present time there exists, for deer, for instance, management units that are traditional units of about 15 years standing that reflect partly population but largely social pressure on the deer population, and those will stay in place until the habitat analysis which is done by timber unit is in place and we can move in that direction or they can move in that direction.

Q. Am I correct that in addition to having zones for deer that you also have zones for moose and zones for fur bearers?

A. I think that that's correct, although the moose zones are again disappearing rapidly as they are -- as that is introduced into habitat supply analysis.

Q. Okay, and I am going do get into this habitat supply analysis in a moment. But when we are talking about different boundaries in this context for wildlife management unit, would they be deer or moose in forest management units, are you thinking of or do you -- are you talking about a specific geographical area that's drawn on a map or are you talking about areas which are similar or dissimilar in terms of just not having information on the same area?

I am not sure whether...

A. No, I don't follow.

Q. Okay, just step back. When you say different boundaries --

A. When I say which?

Q. When you say that there are different boundaries--

A. Mm-hmm.

Q. --when I put to you: Are there any different boundaries for wildlife management units and forest management units and you say yes, what do you mean by that, different boundaries?

A. There are lines on a map published annually that show what are called deer harvest zones and there are, if I remember correctly, five zones. And harvest limits in terms as to the extent that they

are set by buck zoning or both sexes or the period of the season which determines where it fits relative to the advent of snow, usually is what they try to fit it to, those things are drawn on a map and published and they are not conformable to the timber licenses, but the licenses of course only count for the Crown land, in any event.

Q. Now, Dean Baskerville, you made the comment that these particular boundaries or units will probably stay in place until HSA is done by timber management unit. Did I understand you correctly?

A. Yes.

Q. Can you explain what it is about the connection between HSA and timber management that will allow you to do away with boundaries?

A. The intent is to move towards managing the habitat that the deer live in and with control of the harvest level and control of the habitat to actually bring the population. It has been a boom and bust population that is presently incredibly high and likely to bust in the near future.

The desire is to get the structure where the control of habitat and the matching of populations and the control of habitat are on the same piece of ground.

THE CHAIRMAN: But do we understand you that you are going to delineate these units, the boundaries, with with respect just to deer?

THE WITNESS: No, they are being -- they have been delineated based on the forest structure and the capability of the forest to deliver -- of a particular piece of forest to deliver sustainably the needs of about 20 mills in each case, a mixture of mills.

THE CHAIRMAN: Okay, but what happens when you have a boundary, a wildlife unit boundary that is applicable to certain species, say, two or three guilds of species that it is fine for them, what do you do when you get to the other wildlife that might, in terms of their habitat supply, require a different geographical territory?

THE WITNESS: It's a question of how far you -- how big you make the areas you are trying to manage.

THE CHAIRMAN: Do you make it to cover the largest which automatically covers everything within it or do you start off with the ones you want to manage for and then find out later on as your knowledge increases that you have to extend the boundaries and therefore extend the timber licenses, et cetera, to

correspond. How do you start off doing it so that you will catch all that?

THE WITNESS: Okay. The situation right now this year is as Mr. Freidin described it. There is a set of lines on a map that divide the province into 10 units with respect to managing timber and there is another map -- that's a relative new map, been in existence six years. There is another map which has the deer zones on it.

The intent is since the habitat control, and the habitat is being manufactured, has to do with that timber thing, to get the habitat control down to that level. So there has to be -- at some point there is no point in trying to measure and control on one unit of area and only have control on a different -- on a part of that area. So those have to be brought conformable and have not at this point until the 1992 habitat supply analysis - if in fact that is a requirement at that time - then there will be --

THE CHAIRMAN: But I guess my question goes back to what I just asked and that is: Does that end it, or as you want to include more species within your habitat supply analysis, are you then going to have to redraw the wildlife unit boundaries and as a consequence of that redraw the timber management

boundaries?

THE WITNESS: I guess what is likely to happen is that the wildlife boundaries that exist will get redrawn to fit the timber ones at first. And to the extent you cannot control within one of those -- they are quite large areas, they would be on average around 200,000 hectares, they are like a management unit actually.

To the extent that you can't control habitat and timber inside of one of those, I would foresee the system adjusting boundaries so that you got a consistency with respect to your control over habitat and your control over timber. They certainly recognize the problem.

MR. FREIDIN: Q. But, Dean Baskerville, I have listened to what you have said and I hear you perhaps to be saying that you really don't need any boundaries.

If what we are talking about are lines on the map, it's not the lines on the map that are important, as I understand it, it is if you are going to manage a certain land base for timber and the levers of control are the silviculture and the harvest and the silviculture schedule, if you want to manage for wildlife habitat on that same land base, the importance

is that it is the same land base and you have got information on both the wildlife and the timber resource on the same land base; am I right so far?

A. Yes.

Q. And that you can do that, can you not, have information on both resources on the same land base through GIS?

I mean, isn't that one of the very reasons that GIS is such a neat thing, I think is the way you probably put it, is because the boundaries all of a sudden of where they are on the map are not so important as your ability to overlay information and apply that information to the same land base?

A. That's correct. The catch is that if you have a wildlife unit that is made up in parts of three separate timber schedules and three separate harvest schedules, knowing which part of -- that's the easiest way to do this.

If you had three timber areas and you had a wildlife area - this is the wildlife area and this is the three timber areas (indicating) - a wildlife area that's superimposed on parts of those, the upper part is going to be knowing how the harvest schedule -- part of the harvest schedule for this one that is inside this part of the wildlife thing relates to the whole

wildlife objective, where the wildlife objective is measured on all of that but you only have this piece of it. (indicating)

There is a problem in making the sums. Handling the pattern is not going to be a problem because you could overlay these one on top of the other very comfortably. What would be difficult overlaying is that part of the timber harvest schedule and the silviculture schedule and that part and that part and whatever those two are on and trying to relate those to the target, the habitat target for this. (indicating)

Q. Now, looking at the diagram that you have drawn indicating there could be -- the wildlife management unit could in fact incorporate a number of forest management units or portions of them, do you know whether there are reasons for wildlife management units to be the size that they are quite apart from the need to address the habitat of wildlife?

In other words, I can see your point that about perhaps making wildlife management units and forest units or planning on the same areas because of the same levers of control, but do you know whether that would cause any difficulties in terms of the other things that wildlife managers are trying to control, whether it be hunting, whether it be predation?

I mean, is it a simple matter of just saying: Let's have the same geographical land area or are there really other matters that we'd have to consult the wildlife biologists about?

A. That's an interesting approach, that it might have been -- it might be wiser when you are defining management units. If you want to integrate timber and wildlife, to design the original map of the unit with both in mind. The question was: Is it possible and the answer is: Yes, it has to be possible, but I can't think immediately of an example, but it could happen.

Q. It is not a matter of being possible, I am more concerned about whether in fact you would acknowledge that there may very well be reasons for wildlife management units to in fact have a configuration by necessity other than are different from forest management units as they presently exist?

A. To the extent that the populations are responding to something other than the forest habitat, yes. But if they are reacting to -- if the primary thing that you are concerned about, and the primary impact on the population is the forest habitat, the design of the timber unit and the habitat unit are likely to be roughly analogous.

Q. Would it be fair, Dr. Baskerville, to in fact put the decision regarding that particular question to the wildlife biologist? Those are the professionals that would have to make that particular decision?

A. They certainly should have an input to the choice. What it's going to come down to, Mr. Chairman, is to the extent this occurs, you lose accountability. If this whole wildlife unit does not have the right number of moose on it, you don't know whether this guy, this guy, this guy, this guy or this guy (indicating) failed in his timber management plan or if all failed.

Q. This guy, referrig to the forester now?

A. The unit forester. And the concern I would have is that in that situation it is going to be very difficult to track back and correct. When you are not achieving the habitat goal -- the population and habitat goals that you're seeking, it is going to be very hard to track back and find out what is the causative base for failure.

Q. You have difficulty in determining what the causative basis of failure was if in fact you had hypothesized or forecasted that it was -- habitat

was the essential factor in the first place?

I mean, you can go ahead and do all the hypothesizing you want, can you not, Dr. Baskerville, that it is habitat in a particular case, you can do all of your forecasting, you can watch your objectives go up or down and if in fact they are other factors out there, such as predation, such as hunting, such as weather, even at the end of all that you still will not be sure in a scientific cause/effect relationship whether in fact was the great habitat you created that has caused that population to up or down as opposed to one of those other factors?

A. In the structure that's shown here, I agree, you will not be able to tell. I would argue that if you had conformable areas that there would be the potential to discriminate between those. It does not exist in this format.

You would not be able to distinguish which of those things if in fact you couldn't relate the population response on the same area to the area which you were making the interventions. It seems to me that the presumption -- the reason we are here is that there is a presumption that habitat is a major concern and that habitat is influenced by the harvest pattern. If that is not the case, if in fact the other

elements override harvest pattern, then we may have a relatively simple solution here, but I don't think that's what you are intending.

Q. Okay, thank you.

THE CHAIRMAN: Well, has enough research been done in your view, Dr. Baskerville, to say that the major factors in controlling wildlife population, aside from hunting on the one side, that kind of pressure, is habitat supply?

In other words, is the original hypothesis upon which you are basing the necessity of having a conformable land base sufficiently been studied to be reasonably presumed to be correct at this point?

THE WITNESS: There is surprisingly little research that would in fact do anything to help you at this scale. The research would be anecdotal, it would deal with a little corner here someplace rather than response at that level.

It strikes me that the issue at hand is to find out whether the strategic use of a harvest schedule and a silviculture schedule is impacting on a population population. That's the impact possible. I know of no research that has addressed it on the scale that you're talking about.

Clearly, the fact that you are talking about wanting to constrain harvesting implies that a lot of people believe there is a connection, otherwise we wouldn't be having this discussion.

So if that is true, it seems to me that the best chance to learn is to have the units in which you are implementing the actions and the units in which you are measuring the responses the same. At least then you are dealing with the same set of dynamics.

THE CHAIRMAN: Provided you can also observe the other factors other than harvest schedule and silviculture schedule that might have an impact on that same population?

THE WITNESS: That's correct.

THE CHAIRMAN: Such as hunting, predation, all other --

THE WITNESS: Yes.

MR. MARTEL: That's the only way you can control that, to be on similar boundaries at the same time. How would you control hunting? I mean, you can't tell, you'd have to count out how many moose are taken from each section unless it's the same area you are talking about.

THE WITNESS: That's correct.

MR. MARTEL: And everything leads to

trying to get the same boundaries so that you can measure everything under the same set of circumstances.

THE WITNESS: Or at least boundaries that are subsets of one another so that when you try to make a reconciliation of total number of moose and whatever you've done, that you have a consistent chance.

THE CHAIRMAN: Because don't you run into this most often - I think we have heard evidence - that you may have an endangered species and you may control everything here and then find out that the major factor is because of its wintering grounds in Brazil or somewhere outside of the jurisdiction over which you have absolutely no control?

THE WITNESS: The fact of mobility of wildlife means that whatever boundary you place on it is going to be arbitrary, and that risk exists.

MR. TURKSTRA: Mr. Chairman, before Mr. Freidin moves on to another topic, I am up to about 12 times that that diagram has been referred to as this or here, and I wondered if we should push the green button.

THE CHAIRMAN: Well, you can push the green button but you will have to push the switch to warm it up before you can push the green button.

MR. TURKSTRA: Oh, I see, all right.

Well, before it gets erased maybe...

(laughter)

THE CHAIRMAN: It can be retrieved, Dean Baskerville, eventually if you push the right stuff.

MR. TURKSTRA: There is nothing like yesterday's news.

MR. FREIDIN: Oh, save that for later on.

THE CHAIRMAN: We will retrieve it later, I think it is still there somewhere.

MR. FREIDIN: Q. But just for the record, the diagram basically showed a large wildlife management unit which encompassed part of - I think you had four - four forest management units?

A. Three.

Q. Okay. You testified, Dr. Baskerville, that when you did your audit that the only place that you could see the feedback loop in plans was in relation to the free to grow, where in fact you see that it was fairly clear that when something became free to grow it entered into the MAD land base and you also commented in respect to the tables in the plans you looked at that the text described the tables but it did not contain an analysis that you would like to have seen. Is that a fair summary of some of your evidence?

A. Yes.

Q. Now, I want to describe to you certain situations and I want you to assume -- well, I want you to advise whether the situations I describe to you are viewed by you as being a movement in the right direction in terms of the direction that you would like to see management going.

If I might first, if in a timber management plan there was a discussion which compared planned operations to actual achievements, provided or discussed -- identified the significant differences between planned operations and actual achievements which provided the reasons for significant differences or an acknowledgment that actual approached plan, that confirmed or invalidated I suppose the effectiveness of management strategies which identified outstanding problems and issues as a result of that information and contained a discussion of progress toward attaining the stated management objectives for the unit, would those sorts of things being included in a timber management plan be things which in your view you would characterize as a movement in the right direction?

A. Yes. As I understand those things it would be and there is always a 'but'. For instance, achievement could mean did you get your forms filled out in time, or it could mean did you get control of

the forest in a particular way at a particular time in a particular place.

So that as I listen to those, I hear measures of actions taken, measures of response in comparison to what you want the system to do, rather than of what people do and, in that context, I would say those are the kinds of things one would look for.

Q. And there was no provision I understand in the Timber Management Planning Manual or manuals that you looked at back in 1986 which provided or indicated that such subject matters should be addressed in a plan?

A. No, I don't think -- that's correct. I think you will find that nice words like that are in there. The issue was whether or not the delivery was again in words or whether it provided substantive measure. I can't imagine that somewhere in the preamble to that manual, which was something like 29 pages long, that it didn't say that those kinds of things would be done or infer them.

Q. If the words I read to you were put into the manual in February of 1988, you couldn't have read them at the time you did your audit. I think that's fair?

A. February -- yes. No, I couldn't

have.

Q. All right. Thank you.

THE CHAIRMAN: Well, you are not talking that those identical words were in the '86 audit, but you are indicating that in your belief in the preamble somewhere there were words of a similar import; is that what you are saying?

THE WITNESS: Yes.

MR. FREIDIN: Q. In relation to the tables, Dr. Baskerville, and in terms of wanting an analysis as opposed to just a description of what was in the table itself; first of all, am I correct that when you said the tables tended to describe the table, by that I understood you to mean it just basically said here's what the table will tell me - what did you mean by that, don't let me guess.

A. The structure of the manual - you have probably been regaled with this, Mr. Chairman - is such that it lists a table and describes the elements, the entries that will go into the table, and then there is -- the next section will say provide discussion of an elucidation of the table, and the manual -- the plans tended to simply describe that the paragraph, the words tended simply to describe what the table said, so that you got the same thing in both places, rather than

any analysis of what the table meant in terms of either a timber problem or the efficacy of management or whatever.

Q. And if I might just give you a hypothetical, Dr. Baskerville, there is a table in the timber management plans Table 4.19 which deals with allocation for renewal and maintenance, basically it sets out forecasts of what renewal and maintenance activities you are going to undertake.

Do I take it that if you had a text which did more than just said here's what the numbers said but rather went on and indicated how the numbers were generated, that the numbers indicated that there was a problem for regeneration when one examined the past history in certain types of stands, that indicated how that particular problem was going to be addressed in the specific plan in question by action, is that the sort of analysis in a plan that you believe is the sort of thing that was lacking?

A. Yes. Again, in the sense of for this situation where the -- how do I apply the guidelines in order to achieve those renewal targets, even a comment on what happens if you don't harvest all of the allowed area and that sort of thing, because those influence -- those are the right kinds of things to be concerned

about.

Q. Thank you.

Now, a few questions about targets. You were asked by Mr. Hanna about performance measures and the phrase performance measures is his phrase.

He asked what one might expect to see in Ontario in terms of the development of things such as HSA or GIS and in what time frames. Do you recall that general line of questioning?

A. Yes.

Q. Now, you indicated in your evidence that although it was possible to set such targets, that you were uneasy with that approach.

And did I understand correctly that at least one reason for you being uneasy was that the change which you believe is required involves a change in a philosophical approach and that if you try to force it that what you are likely to end up with is people taking action which really is only an appearance of doing what you want, you won't really get the result that you want; is that a fair?

A. I think that's an accurate, very accurate paraphrase of what I said.

Q. Now, did the belief that change should not be forced have any effect on how you

approached your audit and, more particular, I am more interested in how you wrote your report. There were no specific recommendations for instance?

A. Oh yes.

Q. Was that or anything also about the way you wrote your report in any way motivated by your view that forced change is not the way to go?

A. It certainly was. My experience, such as it is with bureaucracies, Mr. Chairman, suggests they are almost the perfect mechanism for encapsulating change rather than embodying change, they are rebuff but they were built to be rebuff.

We built bureacracies in a parliamentary system to buffer from change when a government changed and they were built to have inertia, designed to have inertia and they have inertia. It really shouldn't be a surprise to us.

On the other hand, if you can infuse a philosophy, was the word that you used, I think I used change, through one -- through such a system, then you have equally a new powerful tool.

At the time I wrote the audit I was acutely aware that it would be very simple to take 107 recommendations and announce the next week that those hundred things had all been addressed, here's the

things that will be done, and we would not be arguing about the audit today. I'm sure if that had happened. I really believe that, that it would have all been done because, see, they had in fact fullfilled each and every one every of those little things by some tid bit.

The issue really was: How do you approach philosophically, if you will, but how do you approach intelligently the task of designing management on a unit, how do you make it happen.

And the change that needed to happen had to do with, I think I have used the phrase, that it was a systemic particular problem, that the structure of the way plans were created and approved and accepted was such that there was a systemic problem in that you got a plan that conformed to the mold whether or not it in fact did what you wanted it to do, and what was needed was movement towards a structure where the evaluation of a plan was not does it conform, so much as does it do what its implementation -- do what you need to do.

And I attempted to write the report in a format that would make people think about those systemic problems rather than try and prescribe how to fix all the itty bitty pieces.

As a matter of interest, in terms of the

structure, one version of the report had something like a hundred recommendations in it and I simply removed them and said: No, I really want these people to think about what they are trying to do, not simply react to a set of simple recommendations.

MR. MARTEL: Not just smoke in mirrors then.

THE WITNESS: I wanted to prevent that, if I could.

THE CHAIRMAN: Dean Baskerville, did you write the report with the idea that if you want to effect a change in philosophy you review what the present case was and then you put forward your management philosophy of what you would like to see done by identifying what you perceive to be the problems with the existing management system.

But did you in your view - in hindsight, if I can put it that way - did you put enough in the report, in your view, to illustrate how you get from where you were in '86 and previous to where you would like to be in terms of the type of management philosophy you set out in the report, because I think a good deal of the testimony or the evidence before this Board concerning the report deals with that very issue: Here we were on the one hand back in '86 and prior,

here's where at least in your view we should be going, and a lot of parties are having some difficulty in ascertaining precisely how we get there and at exactly what speed and what can be practically accomplished in both the short term, the medium term and the long term.

And were you to write the same report today, would you be giving more consideration as to try, in your view, outlining how you would get there?

THE WITNESS: That is a really difficult question for me to answer and let me explain why. The invitation was to examine a system that was in place and comment on its efficacy, not suggest that it be rebuilt and save only the licence plates and change everything inbetween. But given that we have an approach, comment on the efficacy of that approach.

So that I didn't attempt to build my philosophy into it in the sense of going the distance and saying I would scrap area regulation move to defined targets and defined cause/effect actions and manage adaptively.

The system had a procedure built around a manual, it was going to follow that manual, and there wasn't any question about that. The issue was: What elements of that system in the use of the manual were, in my view, likely to cause it to freeze on a -- where

they were as opposed to expand the knowledge of how the system worked and how to control it.

If I were asked again to look at it, at whatever is there now, it's difficult. If you are asked to audit, presumably the question is: How is what has been presented to you functioning and operating, and is it properly represented, that is different than being invited to redesign, and I would be a little uneasy about trying to impose a whole new structure.

My intent was to examine the efficacy of the system that was in place, comment on it, particularly with respect to where it was not likely to result in the targets of achieving management, it would -- the targets as they were described, they would always get the right number of seedlings planted but no one would know whether they solved a forest management problem. That, to me, was a kind of thing that they needed to know, because there is a crucial difference.

I mean, if they weren't planted -- as we said earlier, some stands need planting some don't, so the ones you want to plant are the ones that need planting, not the ones that don't need planting.

The audit, to the extent I could in that time, examined the efficacy of the system that was in

place. I didn't attempt to prescribe beyond, I felt that it was reasonable to say that the objectives that they were using weren't nested, that they weren't precise and so on because that was part of the structure, but I did not advocate a change in the way they went about it.

MR. FREIDIN: Q. Now, Dr. Baskerville, I understand that on September the 4th, 1986 when your audit was released you also made available at a news conference a written statement of three pages in length; is that correct?

A. Yes.

MR. FREIDIN: And I would like to mark that particular statement dated September the 4th, 1986 as the next exhibit, Mr. Chairman.

THE CHAIRMAN: Exhibit 980.

MR. FREIDIN: Q. Do you have a copy of that, Dean Baskerville?

A. Mine is pencilled up severely, it's one I spoke from.

MR. GREENWOOD: (handed)

THE CHAIRMAN: Thank you.

---EXHIBIT NO. 980: Press release by Dean Baskerville on September 4, 1986.

MR. FREIDIN: Q. If I might, Dr.

Baskerville, direct your attention to the first page, the last line of the document reads:

"The audit report does not prescribe specific changes to the Ministry forest management procedures. This is partly because forest management as a design process as unique to each forest with no absolute standards but mostly because I consider it essential that an ongoing process of change be internalized."

Now, could you confirm for me - you may very well just said that it's what you have just spoken about - I would like to know precisely what you meant when you side the ongoing process of change must be internalized?

A. For a structure such as the one we are talking about here to have any chance of delivering what you want the players have to believe that they built the structure, they understand what they are doing and that, in fact, they are doing the things in a way that connects.

That suppose in an extreme case that I had prescribed a different structure and Mr. Kerrio has said: Yes, that it and announced it the next day, the nature of a bureaucratic structure would have made that

a completely futile gesture, it just wouldn't have happened. If you want change that is persistent you must internalize it in such a structure.

The phrase I used last week was infiltrate and subvert. To change theose kinds of systems it's necessary to built inside it the philosophical drivers that cause it to go in the direction you are looking for and that was what I was getting at.

Q. Okay. And is it in some way related to the evidence that you gave a moment ago about forced change; is there a relationship there?

A. Yes.

MR. FREIDIN: And before I ask my next question, Mr. Chairman, what was the exhibit number for this document?

THE CHAIRMAN: 980.

THE WITNESS: You are getting perilously close to the magic number, Mr. Freidin.

MR. FREIDIN: Unfortunately, Dr. Baskerville, I guarantee I will not put in the thousandth exhibit while you are here.

THE CHAIRMAN: I think the industry is looking more vulnerable as we go along.

MR. CASSIDY: Actually I was taking

comfort in the fact that we had already reached 980.

MR. FREIDIN: You already owe me dinner, Cassidy.

Q. Now, I'm not asking you to be critical and I am not being critical when I tell you, Dr. Baskerville, that the legislature of this province has given this Board the power to in fact impose targets to do certain things within certain time frames in relation to timber management, and if the Ministry of Natural Resources, as the proponent, is unable to fulfill these obligations, are you aware that they can in fact be charged with an offence under the Environmental Assessment Act?

A. Yes, I understood that.

Q. All right. Now, what I would like to ask you is, in light of your views on forced change and your uneasiness about targets, what comments if any would you like to make to the Board regarding how they might address their task of developing reasonable terms and conditions?

THE CHAIRMAN: Well, I'm not sure about that, Mr. Freidin. I mean, we have our jurisdiction, our responsibility, we follow the legislation and I'm not sure that it's necessarily within Dean Baskerville's purview to essentially indicate what the

Board should and should not do.

MS. SWENARCHUK: Mr. Chairman, could I just add that Mr. Freidin is not the only counsel and his party is not the only party here who might have been very interested in putting to Dr. Baskerville numerous questions relating to this process. It was our understanding that this process was not within the subject matters that would be put to Dr. Baskerville.

THE CHAIRMAN: That's right. We have our mandate and, as you are aware, Mr. Freidin, Dean Baskerville was here is to address his audit, the response to the audit and some of the other areas that we allowed the parties to get into, bearing in mind his appearance and that they would not be calling him at a later stage.

I don't think it's fair to put to him and put him on the spot as to what he thinks the Board should or should not do, particularly when the Board is in no way bound to follow any of his advice and it may put the Board into a position that it would not like to be in if, in fact, it chooses not to follow his advice.

MR. FREIDIN: That's fine, Mr. Chairman. I won't ask the question, I think I have the Dean's view on the subject matters I wanted to ask about and I think that's sufficient for my purposes.

Q. A couple of questions arising out of this written statement while we have got it here in front of us, Dean Baskerville. Looking at page 2 in the first full paragraph, going down --

MR. HANNA: Mr. Chairman, sorry Mr. Freidin, I think he said witness statement. I think we are talking about Exhibit 980.

MR. FREIDIN: Oh, sorry, Exhibit 980. Thank you, Mr. Hanna.

Q. Second page, going down about six or seven lines:

"The audit in total took about a hundred days and has examined only a part of the total management system."

A. Yes.

Q. What did you mean by management system in that context?

A. The structure in the Ministry from the numerical end, policy end at 99 Wellesley West down to what actually happens on the ground.

And clearly, given the time of year, I didn't spend any time looking at what was on the ground and the mechanisms for implementing, so I concentrated mostly on reporting and even at that I never got to all the regions nor all the districts, so that I saw a

sample which I looked at, I chose to look at a sample situation in detail rather than look at the whole thing in overview.

Q. Okay. And while we are on page 2, if you go down to the next paragraph, which begins:

"The media has an important role..."

I want you to go down to the fourth last line where you say:

"I do not want a defensive reaction..."

And I take it that is defensive reaction to your audit:

"I do not want a knee-jerk reaction, I particularly don't want to see a knee-jerk reaction because I have gained sufficient familiarity with the management procedures to know that none of the problems are as simple as they appear and that virtually all of the problems are inter-related in ways that must be recognized in the design of realistic solutions."

Do those observations have any relevance to your views on the need for change to be internalized, Dr. Baskerville, and the risks that you believe are inherent in forced change?

A. No. That was clearly my concern

about making sure that there was a positive feeling to invoke change, design change engendered as opposed to building any resistance to it happening. There was, if you think of the context in which this was said, a group of people standing in front of me with cameras and microphones who wanted to hang the Ministry and they simply wanted me to identify the tree.

THE CHAIRMAN: Presumably you would want a mature tree for that.

THE WITNESS: Actually I think oak is official and they didn't have any up there.

No, seriously, the environment of that statement, the context of that statement was a group who wanted to make headlines with essentially negative comment, because that is the way you get headlines, and my concern was that they recognized that none of the problems that I had looked at were as simple as they appear.

And I really mean that; if nothing else, the fact that it has taken this many days to talk about them should indicate that they are not simple. The one that disappeared on the screen is not a simple problem, nor will a simple solution fix it, and...

THE CHAIRMAN: Probably won't be that simple just to get it back either.

THE WITNESS: It seems to me or it seemed to me then, and in fact I would do the same thing were it today, that the need is to motivate internal change that recognizes internal solutions, get away from keeping the people from beating on you.

MR. FREIDIN: Q. I think I understand what you have said, but I'm not sure whether you have answered the portion of my question which asked: How does the inter-relationship of the problems have relevance to your view that there is a need to internalize and the risks you believe are inherent in forced change?

A. It's a common thing for any of us to see someone's actions, someone's plan and to lift a piece of it out and talk about the problem in it and maybe even suggest how to tinker with it, having lifted it out and disconnected it from the district people, the regional people, the unit forester and all the rest.

The problems that I was most concerned about had to be fixed in the context of a structure that was existing and running, and to prescribe out of that context would be to prescribe in futility it seemed to me. Does that answer your question?

Q. Yes, sir.

Q. In relation to guidelines, just going back to that topic again, do you believe that a guideline can provide specific direction for every possible situation that might be encountered in the field?

A. No.

Q. Do they, in your view, by necessity provide broad direction for various situations leaving room for the exercise of professional judgment, or they should?

A. They should, yes. I would...

Q. Do you believe that that is particularly so whereas in Ontario the area for which the guidelines provide general direction is large and diverse?

A. Yes, large and diverse and administratively complex because of the tremendous areas involved and distances between people.

Q. And I take it that from your evidence that you would not want to see anything occur which might increase the likelihood of the guidelines being treated as rulebooks as you have described it?

A. Understatement. Yes, I certainly would not want to see that.

Q. Dean Baskerville, do you believe that

a direction which says that any time that you don't do what the guidelines says that you have to provide a written explanation might cause the people to do exactly what you are trying to avoid; and, that is, to have them treat the guidelines as rulebooks?

A. I think, Mr. Chairman, we discussed this earlier where you asked if the identification of deviation was adequate, and I tried to answer in the context that the identification of deviation gets into -- it invites a person to rationalize what has been done rather than to actively be seeking to try to achieve a goal, and I agree with the statement as you...

MR. FREIDIN: Might be a good place to stop, Mr. Chairman.

THE CHAIRMAN: Very well. Okay, ladies and gentlemen, we will adjourn for the day.

I remind you of the Farr & Associates gathering downstairs for those who want to attend. I believe it's Suite 709 on the 7th floor of this building.

And we will commence tomorrow at 9:00 a.m. Thank you.

---Whereupon the hearing adjourned at 4:25 p.m., to be reconvened on Tuesday, December 12th, 1989, commencing at 9:00 a.m.